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of the
MISSOURI STATE MEDICAL ASSOCIATION

VOLUME 45
NUMBER 1

JANUARY, 1948

SINGLE COPY, 40 CENTS
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ORIGINAL ARTICLES

Carcinoma of the Breast
6-N-Prophy-Thiouracil in the Treatment of Hyperthyroidism
Bismuth Therapy of Verrucae
Hyperparathyroidism
Mistaken Diagnoses of Tuberculosis

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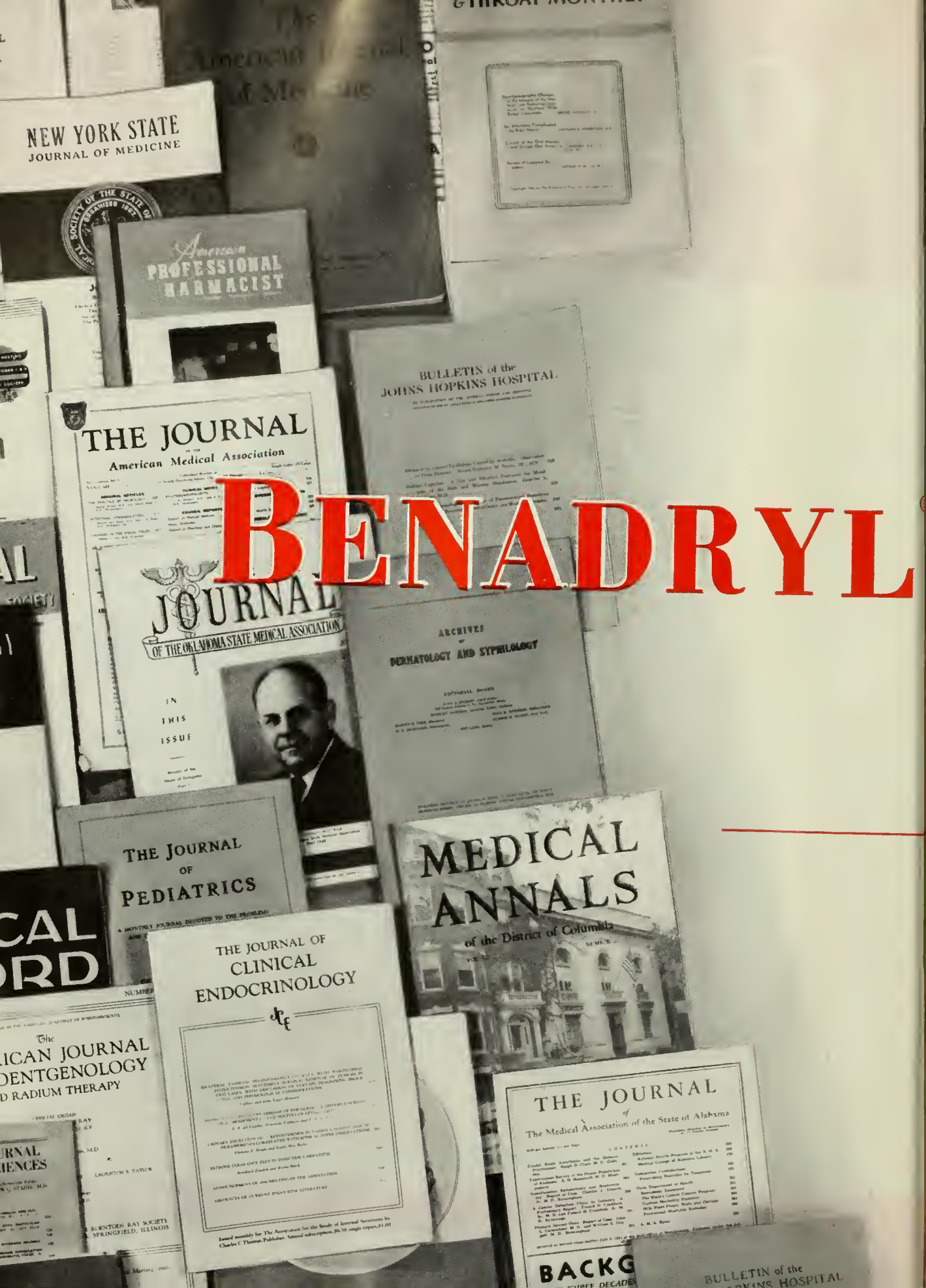


EDITORIALS

Doctors Grow Older
The Time Has Come
Public Relations

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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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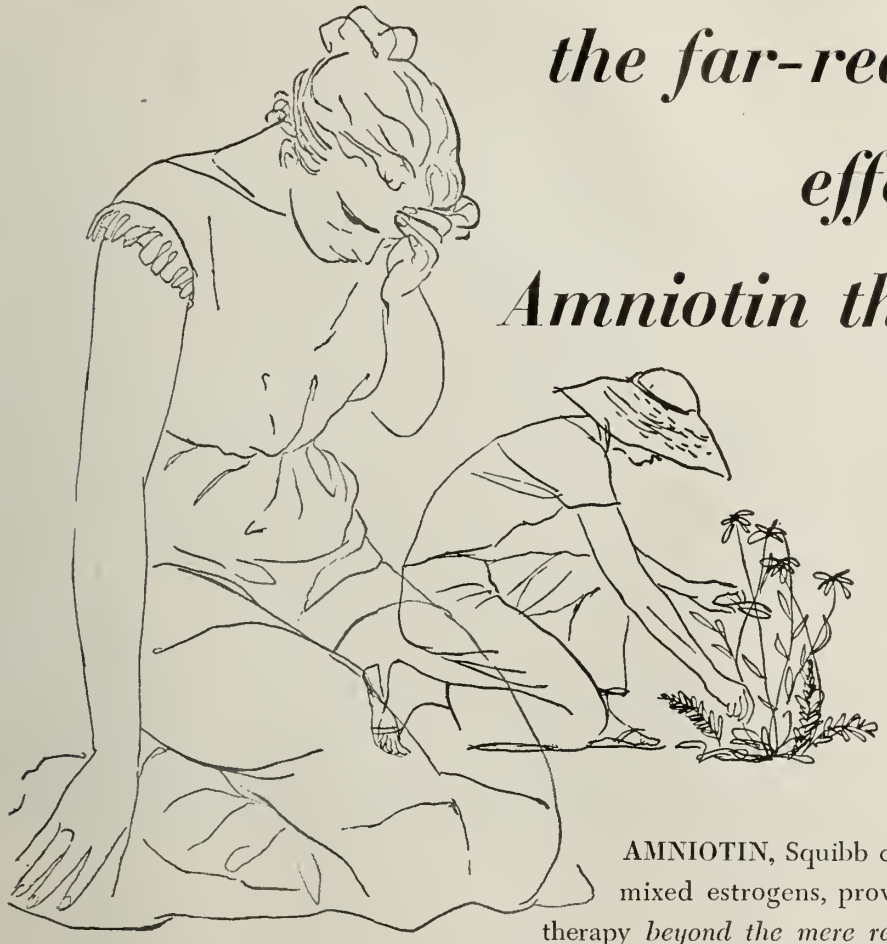
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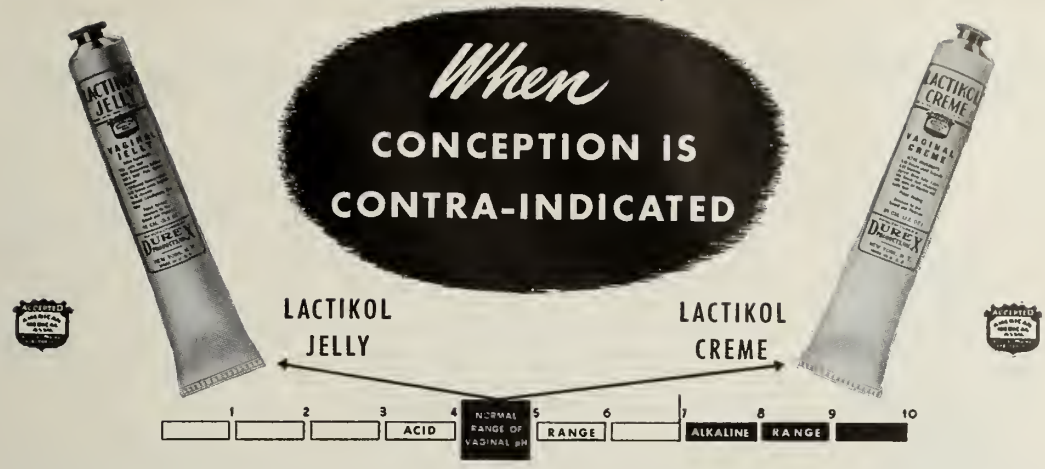


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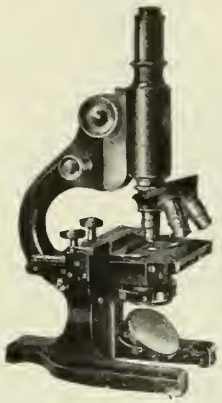
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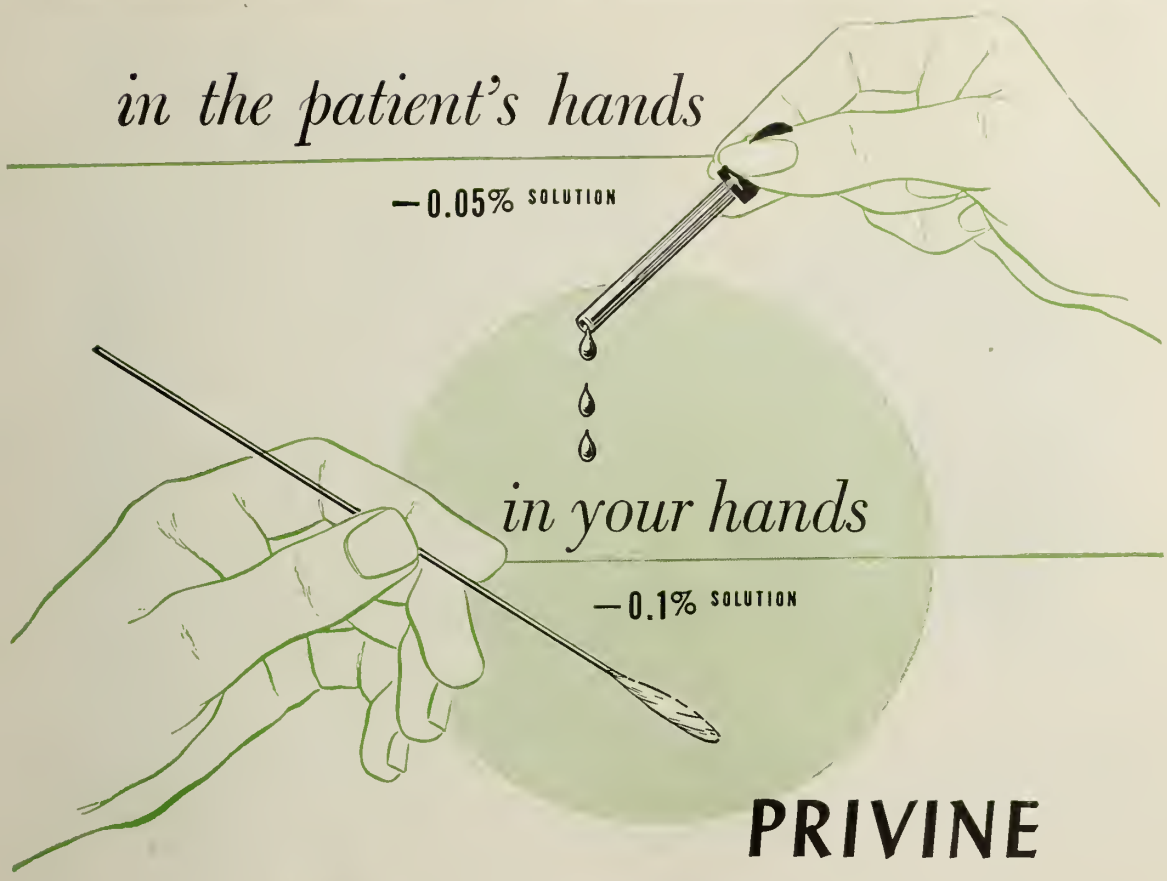
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THE JOURNAL

OF THE

Missouri State Medical Association

The Official Organ of the State Association and Affiliated County Societies
Issued Monthly under direction of the Publication Committee

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VOLUME 45 JANUARY, 1948 NUMBER 1

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CARCINOMA OF THE BREAST

ITS PRESENT STATUS

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CARCINOMA of the breast is a disease of the breast parenchmya. It occupies a position of intermediate malignancy in the gamut of cancers in so far as life expectancy and five year survival are concerned. The death rate, according to the United States Bureau of Vital Statistics, is twelve per 100,000 with between 15,000 and 16,000 deaths occurring annually. Approximately one in every six deaths among women is due to carcinoma of the mammary gland and for each death Levin[1] has found that there are five patients living who have the disease. Though males are not immune, the incidence among them is very low, constituting 1 to 2 per cent of all cases seen. The average age for breast cancer is about 55 years, slightly lower than that for many other types of malignant disease. Breast cancer is conspicuouly absent during adolescence although many other forms of cancer are occasionally seen at this time. About 80 per cent of cases are found following the menopause.

FACTORS BEARING ON CAUSATION

There is no more actual information available regarding the causation of cancer of the breast among humans than there is for other forms of malignant disease. As yet, certain clinical observations at least suggest several possible links in an incompletely understood chain of events. Most of these observations point to the likely influence of either abnormally prolonged, unusually intense, or qualitatively abnormal ovarian stimulation. The absence of mammary cancer during the first two decades of life and its high incidence just preceding, during and immediately following the menopause suggests an ovarian factor. Its higher incidence among patients who have or have had chronic cystic mastitis is also of significance. This condition whose exacerbations closely parallel cyclic ovarian changes has been shown by Warren[2] to be followed by five times the expected incidence of mammary cancer.

The probable influence of an inherited susceptibility must also be acknowledged. Families in whom breast cancer occurs with high incidence frequently are observed clinically. Analogies between breast cancer in mice and in humans become rather far fetched. Nevertheless, the question is often asked regarding the possible influence of estrogenic hormone administration as a stimulus to cancer production in women. Until more information is at hand a definite answer is not forthcoming, but it would seem wise to refrain from the casual administration of these substances to women who have or have had breast complaints of a cyclic nature (chronic cystic mastitis) or who, on the basis of family history, may be suspected of carrying a genetic taint.

CLINICAL PATHOLOGY

The bulk of mammary cancer arises from duct epithelium. It should be emphasized that Paget's disease of the nipple is but a clinical variant of this. The eczemoid nipple changes are but an outward manifestation of the underlying duct cancer. For the most part mammary cancer pursues a moderately active course. Abnormally rapid progress may be anticipated when inflammatory-like changes are present (inflammatory carcinoma). In a small percentage of cases the activity of the cell seems to be largely directed toward intraductal prolifera-

tion with the accumulation of intraductal debris which may be expressed from the cut surface of the tumor in a comedone-like fashion. These comedo-carcinomas along with the mucinous carcinomas, altogether making up less than 10 per cent of all breast cancers, may be expected to run a somewhat slower than average course and to be more frequently curable. By and large, however, the activity of clinically and histologically similar cases of the usual forms of breast cancer may vary widely.

The influence of certain physiologic states on the course of mammary cancer may bear emphasis. Youth appears to exert a slight but definitely activating influence with an increased tendency for bone metastases. Lactation or pregnancy occurring simultaneously with mammary cancer render hopeless the outlook for cure and, as a rule, the course of the diseases is abnormally rapid. Moreover, Smith[3] has shown that the interruption of a pregnancy occurring simultaneously with cancer of the breast decreases rather than increases the life expectancy of the mother.

SYMPTOMS AND SIGNS

The common symptoms and signs of carcinoma of the breast should by this time be so well known as to warrant little attention. However, several points may bear reemphasizing. It is still too little appreciated that pain is almost invariably absent from the patient with anything but advanced disease. Ulceration with infection, bone, nerve, pleural involvement or lymphoedema of the arm, secondary to massive axillary node involvement, may all produce pain, but curable cancer rarely does so. "Prickling" or "sticking" sensations often may be admitted but actual pain is not. Pain, in the absence of obvious cancer of the breast, is presumptive though by no means conclusive evidence that the lesion is noncancerous.

Textbook accounts of the clinical setting of breast cancer are for the most part of academic interest only since they tend to stress the interesting and varied features of advanced cancer. If these are sought for, the diagnosis will be made only after all reasonable chance for cure has been lost. It cannot be emphasized too strongly that the only sign or symptom necessary for a presumptive diagnosis of breast cancer is a "lump in the breast." If this is present in an individual more than 20 years of age, it must be considered cancer until proved otherwise. The attempt to obtain this proof should be initiated without undue delay since the time when metastases may occur is unpredictable. The "wait and see" policy, now rarely practiced, has taken many lives in the past. Patients who have previously had "lumps" removed which proved to be nonmalignant are no exception to the "cancer until proved otherwise" rule when other "lumps" develop.

Occasionally carcinoma may be present when no mass is palpable even on careful breast examination. This most commonly occurs in Paget's disease. Here the eczemoid changes which begin on the nipple and slowly spread out concentrically over the areola will call attention to the underlying diffuse duct carcinoma. Only a small area of skin flattening or very slight dimpling, appreciable only with the proper light arrangement, is rarely the sole hint to the underlying condition.

In the presence of bloddy nipple discharge careful examination usually will reveal either a small mass or one area of the breast which causes the discharge on pressure. Adair[4] and Miller and Lewis[5] have found about the same proportion of benign and malignant lesions responsible for this symptom. Campbell[6] found twenty-one patients out of fifty-five with this symptom had cancer. In view of these figures, and in our own experince in which cancer is frequently found in patients with bleeding nipples, we feel that at least a segmental resection should be performed and the tissue examined carefully for malignant changes.

MANAGEMENT

The management of any patient under suspicion is an operating room procedure. In the best interests of the patient the surgeon who excises a breast "lump" should always be prepared to go ahead with a thorough radical mastectomy. Adair[7] has found that the five year survival of patients who had a local excision followed sometime later by radical mastectomy was only 20 per cent as compared with 51 per cent survival for those patients in whom radical mastectomy was carried out at once. One can only surmise that the vascular and lymphatic engorgement incident to the trauma and healing of the excision wound may have played a part in the dissemination of either incompletely excised local disease or disease present in the axillary lymph nodes.

TECHNICS OF LOCAL EXCISION

Since in accomplishing the local excision of a breast tumor the primary consideration is that the mass may be cancer, the entire technic should be based on that possibility. The patient is draped as for a radical mastectomy. Cosmetic incisions have little place in the management of breast cancer. This does not imply that they may be forgotten. They should only be employed, however when no sacrifice to direct exposure and excision of the suspected tumor is imposed. In general, a skin incision which leads most directly to the tumor is best. Its direction should be planned so as to fit in with a possible subsequent radical mastectomy incision. In general, when tumors lie close to the skin, a skin elipse of varying width should be excised along with the underlying breast tissue to avoid cutting through involved dermal lyphatics. The tumor itself should be excised widely inclusive of all underlying breast tissue and pectoral fascia. This will accomplish removal of adjacent lymphatics which may be permeated for short distances by carcinoma as well as the primary draining lympatics which proceed to the pectoral lym-

patic trunks. It appears to make little difference whether the excision is accomplished with the endotherm knife or ordinary scalpel. Advocates of the former method seem unable to demonstrate any better five year survival rates by incorporating it into their technic.

A surgeon seeing large numbers of breast cancers will be able to determine in about nine out of ten excisions whether he is dealing with a carcinoma by the gross appearance of the cut specimen. In the remaining 10 per cent the pathologist also frequently will be unwilling to make an immediate diagnosis on his examination of a quick section but will wish to await a more carefully prepared paraffin section.

RADICAL MASTECTOMY

This anatomic dissection described almost simultaneously by Halsted and Willy Meyer is technically not easy if one wishes to accomplish it properly. Though it is seldom realized, more technical experience is required in the accomplishment of a thorough radical mastectomy than in the performance of the average subtotal gastrectomy. The more striking difference between the immediate postoperative mortalities of the two procedures has somewhat overshadowed this fact. In addition, there can be little question but that more is lost in the execution of an inadequate or poor radical mastectomy for breast cancer than in a mediocre gastrectomy, partial or total, for carcinoma of the stomach. This becomes apparent when one realizes that a properly executed radical mastectomy will save approximately five times as many patients as a well executed gastrectomy.

The skin incision should suit the individual case. In general, the oblique or vertical elipse (Willy Meyer) will be most frequently applicable and provides excellent axillary exposure. For markedly pendulous breasts the transverse eliptical (Stewart) incision is useful. However, it tends to make exposure of the upper axilla somewhat more difficult. The arrowhead (Greenough) incision is indicated whenever wider removal of axillary skin is desired, as when a primary is located superficially in the axillary portion of the breast or when an involved low axillary node is attached to the skin. Incisions which tend to leave angular skin flaps are to be avoided since the points will often undergo necrosis. Under no circumstances should a radical mastectomy be planned under a specified incision nor should a tumor area be closely approached in order to conform to any certain incision.

The question is often asked, "How much skin should be removed adjacent to the tumor?" An anatomic description of the lymphatics of the breast is not intended here but the answer to the above question is pertinent to them. The primary lymphatic drainage of the breast is deep into the axillary and pectoral lymphatics. Retrograde lymph flow into the skin lymphatics in tumors not directly involving that structure takes place as a rule only when the primary lymphatic routes are blocked. Therefore, if one takes at least as much skin in centimeters as he is able to go around the tumor in depth to the chest wall, he will as a rule have taken a sufficient amount.[8] The conventionally stated 2.5 to 3 cm., or 2 to 3 finger breadths may not be nearly adequate. One should never take less skin than is indicated but should plan to close the defect with a split graft if necessary.

If the skin incision has been made in conformity with this principle, there is no need to dissect extremely thin skin flaps, but they may be dissected in a graduated fashion, thin at the line of incision, progressively thicker as their base is reached. This assures them a better blood supply and decreases the incidence of flap necrosis. The lateral flap is carried back to a point about 2.5 cm. posterior to the anterior border of the latissimus dorsi muscle. Dissection of the medial flap proceeds to the sternal midpoint. Inferiorly, the costal margin limits the dissection and, superiorly, the junction of the sternal and clavicular portions of the pectoralis major muscle. This anatomic division, though usually visible, can readily be developed by gently inserting the finger into the muscle at the costoclavicular joint where these muscular divisions converge. This intermuscular plane is developed laterally to the humerus. The sternal portion is then detached from the crest of the greater tubercle of the humerus and retracted medially and inferiorly. There is no need to remove the clavicular portion of the pectoralis major muscle since it does not interfere with exposure of the axillary vein and obscures no lymph nodes draining the breast. Just below the costoclavicular joint the finger may be inserted into a readily identifiable cleavage plane beneath the sternal attachments of the pectoralis major muscle. The origin of this muscle is severed without traction. It is here that the perforating branches of the internal mammary vessels with their lymphatics are encountered, clamped, cut and ligated. Those in the second and third interspaces are usually the largest of the group.

Again considering momentarily the lymphatics of the breast, drainage is primarily by way of the external mammary (axillary) and internal mammary routes. Though the external mammary group is the larger of the two, it has interposed along its course an elaborate node filter system (axillary lymph nodes). The internal mammary lymphatics lack such a system until they have entered the chest. For this reason it has seemed logical to section the internal mammary group first, supposing that cells lying within the local lymphatics occasionally be shaken free during the operation.

The costocoracoid membrane (coracoclavicular fascia) is next divided, thereby exposing the pectoral vessels and nerves. These are divided and ligated. The scapular insertion of the pectoralis minor is next detached close to the coracoid process. It contains a small nutrient artery at this point which usually requires ligation. Part or all of the pectoralis minor may then be detached from the

chest wall as desired. Excellent exposure of the entire axilla is thus obtained. The anterior axillary fascia is incised over the large nerve trunks to the upper extremity and the axillary vessels. Gentle traction and sharp dissection are all that is needed to complete the exposure of the axillary vein to its inferior border. Beginning at the costoclavicular ligament (a tough, sharp, readily identifiable structure), another areolar tissue sheath, the posterior axillary fascia, is incised and a plane is entered which extends laterally, anterior to the external intercostal and serratus anticus muscles to the scapular and latissimus dorsi muscles. The axillary contents are contained within this fascial envelope, which is then freed from the axillary vein in a downward, lateral direction by ligating tributaries of the axillary vein as they are encountered. The axillary vein may be removed without the development of appreciable arm edema in most cases if lymph nodes are adherent to it. The nerve to the serratus anterior muscle is found partly within the posterior areolar sheath described, and may readily be dissected free and should be carefully spared. Injury to it produces winging of the scapula. The nerve to the latissimus dorsi is somewhat more difficult to find but usually is encountered just medial to the subscapular vein. When any extensive low axillary node involvement is present this nerve should be sacrificed rather than risk tumor dissemination by dissecting it free.

Care in the dissection of the axilla is probably the most important part of a radical mastectomy. Adequate exposure of this entire area cannot be obtained unless the entire costal head of the pectoralis major muscle is removed. Blunt finger or gauze dissection or the use of rake-like instruments to expose the axillary vein tributaries are to be discouraged since they unquestionably disseminate cancer cells.

Following removal of the breast the wound is well lavaged with saline to remove fatty debris. A drain is placed through a stab wound in the lateral flap up to the axillary vein and the flaps are apposed. If this cannot be done, they are sutured to the chest wall and a split thickness graft is applied. The careful expression of air from under the flaps and the application of a dressing with even pressure applied in the axilla and to the flaps will prevent all but occasional serum pockets from forming.

GENERAL CONSIDERATIONS

Nitrous oxide induction followed by ether-oxygen is a very good anesthetic agent. Patients may be kept in the first phase of the third stage of anesthesia since complete muscular relaxation is not required. By actual measurement the average paient will lose at least 500 cc. of blood during such a procedure. Coller and co-workers[9] in a collected series found the average blood loss at radical mastectomy to be 732 cc. In many instances it is advisable to transfuse during the operation to replace this blood loss. With such a large wound exposed to contamination from the air for several hours it is important to work with as little conversation and as gentle handling of tissues as possible. Traction upon the pectoral muscles incident to their removal will often precipitate shock.

SIMPLE MASTECTOMY

Strictly speaking, this includes only simple removal of the breast. However, it would seem that one should include under this heading every procedure which falls short of being a radical mastectomy: the removal of the breast with low axillary nodes; the removal of the breast with a portion of the pectoralis major muscle and a part of the axillary contents, et cetera. These are all compromise procedures and should only be employed when some definite contraindication to radical mastectomy exists. The absence of palpable axillary nodes is no indication for simple mastectomy, for positive nodes are nevertheless present in 30 per cent of such cases. We have felt it necessary to resort to this in only seven instances in 350 breast removals for carcinoma.

COMPLICATIONS

The complications of mastectomy are as a rule of minor degree. Serum pockets and infection, either as a result of undiscovered serum collections or secondary to skin necrosis, make up the majority. Pneumothorax resulting from punctures of the intercostal spaces and air embolism caused by injury to the axillary vein have been reported but have not occurred in our hands. Any of the complications peculiar to a major surgical procedure may occur. Shock may result from blood loss and traction unless care is exercised. Four deaths occurred among the 350 mastectomies, a mortality of 1.1 per cent. One of these was due to cardiac failure, one to pulmonary embolism, one to infection and uremia, and the fourth was due to bacterial endocarditis secondary to an earlier wound infection. In some respects the low mortality attending radical mastectomy has been a deterrent to the cure of breast cancer for it has, in instances, attracted those to attempt the operation who are not entirely familiar with its adequate accomplishment. It must be remembered that the chance for cure of the patient whose disease still remains localized to the breast and axilla lies in the surgical treatment alone with very rare exceptions.

IRRADIATION

There is no question but that carcinoma of the breast should be radically removed if no contraindications to such treatment exist. Whether this should be preceded or followed by roentgen therapy, however, has given rise to considerable controversy. It is now quite generally agreed that preoperative irradiation has little place in the treatment of mammary cancer. Improved five year results have been contended for postoperative treatment by Adair,[7] Marshall and Hare,[17] though, in

one instance, the treatment has been delivered to the axilla and, in the other, to the chest wall as well as to the axilla. Harrington[10] reports similar improvement in results with or without roentgen therapy and ascribed it, probably more correctly, to earlier diagnosis. In the treatment of acute or locally advanced forms of the disease, such as generally contraindicate surgery, Lenz[11] recently has reported highly gratifying results. Patients with metastases to the lungs, pleura, mediastinum, abdomen, liver and brain are not benefitted by irradiation but are, in fact, often made more ill by the treatment.

There is no question of the real value of irradiation in the treatment of skeletal metastases. For some unknown reason breast cancer in the bone is unusually sensitive to moderate roentgen ray dosage and is almost invariably followed by gratifying relief of pain and recalcification of the bone. The employment of roentgen therapy for this condition is one of the truly paliative measures in cancer treatment.

ENDOCRINE TREATMENT

This has been either in the nature of castration, surgically or radiologically produced, or by the use of hormone therapy, both estrogenic and androgenic. Leucutia[12] has recently reviewed the subject of castration and concluded that evidence pointed to the value of roentgen castration among patients with skeletal metastases in only about one third of the cases treated. It seems likely that surgical oophorectomy would produce the same results. Dramatic regression of extra skeletal metastatic disease has also occasionally been reported after castration.

More recently Nathanson[13] has reported excellent results in a high percentage of patients with advanced breast cancer upon the administration of large doses of stilbesterol. Adair[15] has reported similar results using testosterone. The specific indications and criteria for proper selection of cases have not yet been ascertained, but it does seem certain that the benefits are generally temporary, as in prostatic cancer. This work, a recent development in the field of breast cancer, should be followed with great interest. In the male with advanced cancer of the breast, orchidectomy occasionally has produced regression of both the primary and metastatic lesions. We have personally observed one striking example of this in a Negro male in which regression occurred in the primary breast tumor, satellite skin nodules, axillary and supraclavicular nodes and pulmonary metastases.

PROGNOSIS AND END RESULTS

The outlook for cure in mammary carcinoma is based entirely on whether or not the patient is operable. No inoperable patient will be cured. Hence, this aspect of the problem is related closely to criteria of inoperability. Most of these criteria have long been realized but have recently been well reviewed by Haagenson and Stout.[15] A patient will not be cured by radical mastectomy and, therefore, should not be operated on who: (1) has distant metastases, (2) has supraclavicular node metastases, (3) has an inflammatory type of carcinoma, (4) has satellite nodules in the skin over the breast, (5) has extensive edema of the breast or edema of the arm, (6) has parasternal or intercostal tumor nodules, (7) is pregnant or lactating.

Other less ominous but prognostically poor signs are: (1) ulceration of the skin, (2) limited edema of the skin of the breast, (3) fixation of the tumor to the chest wall, (4) large (2.5 cm. or over) or fixed axillary lymph nodes.

Haagenson and Stout believe that any combination of two or more of the last listed four signs are also sufficient to contraindicate mastectomy. They raise the disquieting suggestion to the conscientious surgeon that patients presenting these ominous signs and who then have mastectomies performed do not live as long as those not surgically treated.

The end results of any form of treatment in breast cancer must be compared to the survival in untreated cases. Nathanson and Welch[16] have shown 20 percent of patients with this disease untreated will survive for five years and that 5 per cent survive for ten years.

Recent reports [7, 17] indicate an improvement in five year survival to about 50 per cent of all operated cases. About 75 per cent of those having no lymph node involvement may be expected to survive five years. About 40 per cent of those having involvement of their axillary nodes may be expected to survive. Most of the patients dying of disease after five years originally had axillary node involvement.[18]

There seems to be little doubt but that surgery has gone as far as it can be expected to go in the treatment of breast cancer at the present time. Further improvement must come through earlier diagnosis, trite though it sounds. The recent end results quoted indicate that this is already making itself felt. That there is room for considerably more improvement is indicated by the fact that from 30 to 50 per cent of patients appearing for treatment are inoperable.

Routine careful breast examinations by doctors will undoubtedly further improve the situation. Patients more than 30 years of age with chronic cystic mastitis should probably appear for reexamination from three to four times a year.

The fear of breast cancer is diminishing among women as more and more cured patients circulate among the population. Many boast of their own and their doctor's accomplishment. Therefore, it seems likely that continued improvement may be anticipated in the results of the treatment of mammary cancer.

SUMMARY

1. The clinical features of mammary cancer have been discussed with emphasis on those which are of practical importance for earlier recognition of this condition.

2. Undelayed operating room confirmation of all suspected lesions followed by immediate radical mastectomy remains the unquestioned treatment of choice. Excision of breast tumors, which prove to be cancer, followed by later radical mastectomy seems to seriously impair the patient's chance for cure.

3. The operative management of a suspected patient is presented with a description of the technic of a thorough radical mastectomy based on 350 personally done or supervised cases. Simple mastectomy and compromise "radical mastectomies" have very little place in the treatment of breast carcinoma. It must be realized that success in curing the patient with localized disease is dependent on the surgical treatment alone.

5. Roentgen therapy and the administration of endocrine preparations are valuable adjuncts to the treatment of inoperable cases or of those with recurrent disease.

6. The outlook for the patient with breast cancer would appear to be improving and will probably continue to do so as diagnosis is accomplished earlier.

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6-N-PROPYL-THIOURACIL IN THE TREATMENT OF HYPERTHYROIDISM

(PRELIMINARY REPORT)

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AND

JAMES P. MURPHY, M.D., *St. Louis*

While it is generally agreed that thiouracil is highly effective in the control of hyperthyroidism, its toxicity limits its use.[1] Further search for a less toxic but equally effective drug brought forth the discovery by Astwood, Bissell and Hughes[2] that propyl-thiouracil was eleven times as goitrogenic as thiouracil in rats. Astwood and VanderLaan[3] estimated that this drug is five times as effective in man and later reported that toxic reactions from propyl-thiouracil were insignificant in their first hundred cases studied.[4] They observed some mild skin irritation and questionable headache, but no leukopenia, severe febrile episodes or other serious reactions as had been reported following the use of thiouracil.[1] They considered 150 milligrams an appropriate daily dosage. In a subsequent report by McGavack, et al,[5] seventy-five patients were treated, employing a daily dosage ranging from 75 to 250 milligrams, with but one reaction (rash and fever). Reveno[6] treated fifty-two patients with one instance of drug fever. Lahey[7] alluded to the drug as effective in the preparation of hyperthyroid patients for surgery. These observers all found propyl-thiouracil an effective antithyroid drug, much safer than thiouracil.

It is the purpose of this paper to report further on the use of this new antithyroid drug and add to

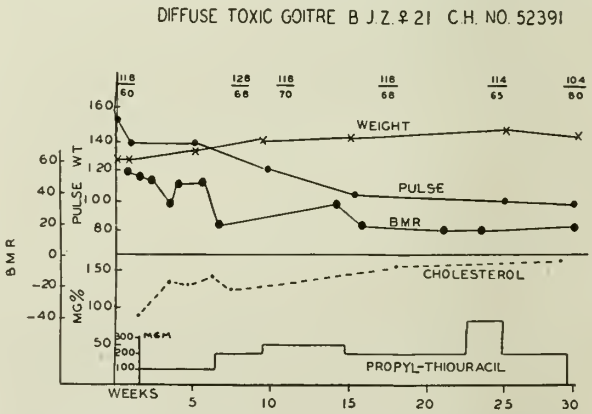


Fig. 1. B. J. Z., 21 year old female with Graves' disease whose symptoms were first controlled by thiouracil. Patient out of contact one year, then returned with basal metabolic rate of plus 46 per cent. Good response with propyl-thiouracil. This patient subsequently was operated upon with smooth course. (St. Louis City Hospital Service.)

From the Department of Internal Medicine, St. Louis University School of Medicine, and Medical Services, St. Louis City and St. Louis County Hospitals.

Acknowledgement is made to Dr. Stanton Hardy, Lederle Laboratories, for the supply of propyl-thiouracil.

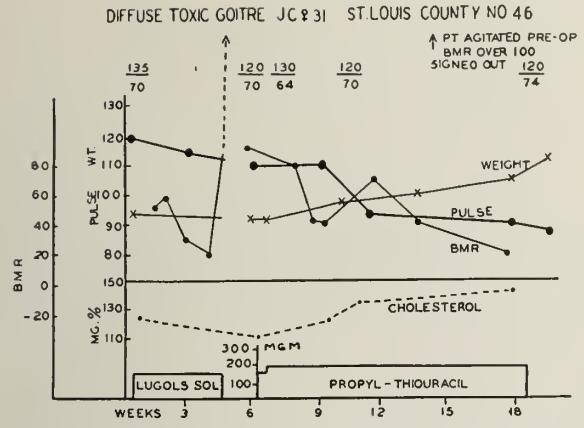


Fig. 2. J. C., 31 year old female, first was prepared for surgery with iodine. She became highly excited the night before the operation and signed herself out. Good response to propyl-thiouracil in outpatient clinic.

the experiences already recorded. Prior to the use of propyl-thiouracil, thiouracil had been used in the treatment of forty-four patients during the previous three years,[8] which afforded a background for comparative study.

This report is based upon the study of thirty-one patients,* twenty-three of whom had diffuse toxic goiter, ranging in age from 19 to 69 years, with basal metabolic rates between plus 27 and plus 96 per cent. Five patients had nodular toxic goiter, ranging in age from 51 to 70 years, with basal metabolic rates of from plus 26 to plus 87 per cent. One patient was treated in whom there was no demonstrable goiter, but with persistent basal metabolic rate of from plus 25 to plus 30 per cent. Two patients with diffuse nontoxic goiter completed the series. Three of the diffuse and one of the nodular types had previously been controlled with thiouracil, with a return of symptoms shortly after withdrawal of the drug. Three in the diffuse group had previously had iodine therapy, two of whom had responded satisfactorily to this plan of treatment. There were three instances of recurrent diffuse goiter following surgery.

DOSAGE

When the drug was first used the initial dosage was 75 milligrams a day for from two to three weeks, with frequent white blood counts and observations. At the end of this period the dosage was increased by 50 to 75 milligrams for another two or three weeks. If results then were not satisfactory, the dosage was increased to 250 or 300 milligrams daily. This plan required from sixty-five to 100 days or longer to note expected improvement, as measured clinically and by the basal metabolic rate. Our present plan is to give 100 milligrams the first week and, if well tolerated, 200 milligrams the second week, and 300 milligrams the third week. On this dosage, quickest results were obtained. Eight of our patients received 300 milligrams over a period ranging form thirteen to sixty-eight days, an average of thirty-six days. One of the patients received 500 milligrams for more than two weeks without any untoward symptoms. General improvement such as weight gain, slowing of the pulse and decreased nervousness was often noticed before a normal basal metabolic rate was obtained. In one instance a 19-year-old girl with Graves' disease who previously had been controlled by thiouracil in about four weeks' time required 154 days, with daily dosage of 300 milligrams the last sixty-eight days. During this time her basal metabolic rate receded from plus 54 per cent to plus 14 per cent.

RESULT OF TREATMENT

Results of treatment in general paralleled those obtained with thiouracil, except that response was definitely slower. Of twenty-three instances of diffuse toxic goiter, a satisfactory response was obtained in all, and in five instances of nodular toxic goiter a complete response was obtained in four, and partial response in one. In the one instance of persistent basal metabolic rate ranging between plus 25 and plus 30 per cent, the basal metabolic rate was lowered to plus 9 per cent, employing 200 milligrams per day over a sixty day period. Clinically this patient showed little change. Her weight remained stationary although the pulse rate decreased from 100 to 78 beats per minute. In the remaining two cases of diffuse goiter, no clinical change or alteration in the basal metabolic rate was noted with 150 milligrams of the drug daily for sixty-nine days in one, and 200 milligrams for 124 days in the other. The final diagnosis in these last two cases was diffuse nontoxic goiter.

The incomplete response in the nodular toxic type was in a sixty-four year old woman in whom the original basal metabolic rate was plus 65 per cent. This woman received 75 milligrams of propyl-thiouracil for twenty-one days, followed by 125 milligrams for the following twenty days and 150 milligrams for the subsequent fifty-six days. The

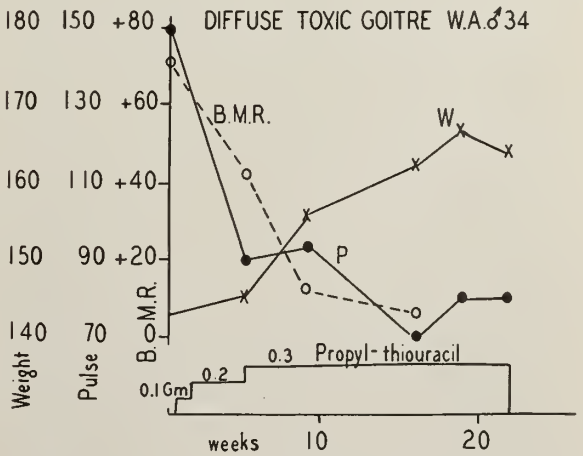


Fig. 3. W. A., 31 year old male, with severe Graves' disease. Weight loss was 20 pounds in one month. He continued hard physical work throughout course of treatment. After nine months he was maintained on 100 mg. of propyl-thiouracil.

* Acknowledgement is made to the resident and visiting staffs of St. Louis City and St. Louis County Hospitals for inclusion of cases on their services.

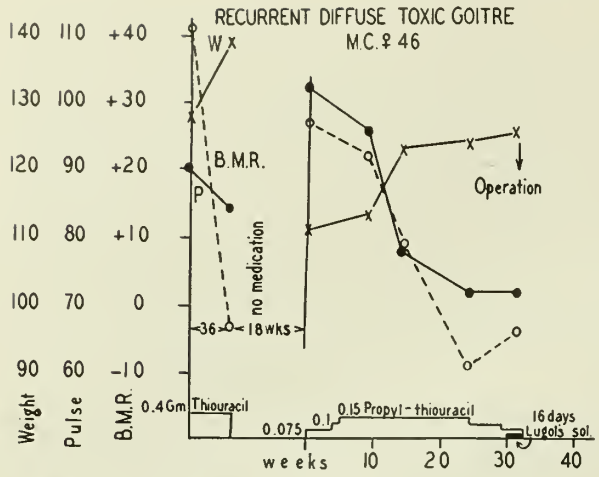


Fig. 4. M. C., 46 year old female, was first operated upon four years previously for Graves' disease. Goiter and toxic symptoms recurred, which were controlled by thiouracil. Toxic symptoms soon recurred after withdrawal of drug but were again controlled by propyl-thiouracil and patient was prepared for surgery. Operation and course were uneventful.

dosage was then increased to 300 milligrams for fifty-one days, the total duration of treatment being 148 days. The lowest basal metabolic rate during therapy was plus 27 per cent, and at the termination of treatment it was plus 48 per cent. During this time her weight had shown no increase and auricular fibrillation, which had persisted from the beginning and was treated concurrently with digitalis, was unaltered. Finally, this patient was given Lugol's solution for one month and operated upon. The day before operation the basal metabolic rate was plus 52 per cent. She went through a one-stage subtotal thyroidectomy uneventfully and after six months' time has shown satisfactory improvement.

TOXICITY

Of the thirty-one patients treated, but one showed signs of toxicity. This was in a 51 year old female who received 75 milligrams for nineteen days. At that period she was found to have a white count of 2,000 with a normal percentage of granulocytes. The drug was discontinued and recovery followed.

In one instance a decreased tolerance to the drug was noted after the use of cold tar products in the treatment of a cold. A 63 year old woman who previously had been controlled with thiouracil, and was being well controlled with propyl-thiouracil, developed a respiratory infection for which cold capsules containing aspirin and phenacetin were prescribed. After she recovered from the cold, the basal metabolic rate was again elevated and symptoms of toxicity had returned. Propyl-thiouracil again was prescribed and, while she had previously tolerated 200 milligrams a day, it was found that a dosage larger than 100 milligrams depressed the white blood count below 4,000. In a second instance, a 19 year old girl had been given the drug for nine months but had discontinued it five weeks before she entered the hospital, where a white blood count of 1,700 was discovered. She gave the history of having had a sulfa drug the previous week. As has been noted before, sulfa drugs and coal tar derivatives lessen[1] the resistance to thiourea derivatives, and from the experience in the 19 year old girl, the process is reversible.

COMMENTS

In the three patients who were operated upon, no operative storm was experienced even though the basal metabolic rate was not depressed below zero as was so handily done with thiouracil. Patients who were operated on were given preoperative iodine and no technical difficulties were encountered.

General improvement as expressed by weight gain, slowing of the pulse and decreased nervousness may be noted before a satisfactory lowering of the basal metabolic rate occurs.

Alteration in the size of the thyroid gland was variable. In several there was unmistakable enlargement, while in others there was no change in size, or possibly slight reduction in two instances.

There was no instance of precipitated or increased exophthalmos noted in the group treated.

A 44 year old woman with diffuse goiter who had been prepared for surgery with iodine had a basal metabolic rate of plus 9 per cent and pulse of 108 before propyl-thiouracil. After 100 milligrams of the drug for 120 days, the basal metabolic rate measured plus 5 per cent, the pulse rate was 72 and she gained 24 pounds in weight, which may be taken as an accurate index of her improvement.

SUMMARY

Propyl-thiouracil is an effective antithyroid drug when employed in a daily dosage up to 300 milligrams. In thirty-one patients treated with the drug, there was but one instance of leukopenia, which subsided immediately following withdrawal of the drug.

Sulfa drugs and coal tar derivatives may cause leukopenia following the use of propyl-thouracil, and in one of the patients in this series there was suggestion that the process is reversible. It is ad-

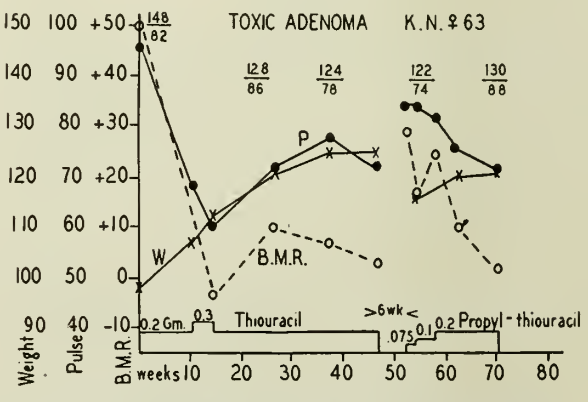


Fig. 5. K. N., 63 year old female, with toxic adenoma of long standing. Thiouracil controlled symptoms. After forty-seven weeks the drug was withdrawn with rapid recurrence of symptoms which were again suppressed by propyl-thiouracil. Maintenance daily dosage was 100 mg.

visable to observe the patients very closely when these drugs are used at close intervals.

Of the twenty-eight patients with toxic goiter treated, a satisfactory response was obtained in all but one. This was a 64 year old female with nodular toxic goiter who showed partial response after five months' treatment.

Propyl-thiouracil closely parallels the effect of thiouracil except that it acts more slowly on dosages up to 300 milligrams per day. About ten to twelve weeks is required as the average to bring a patient with diffuse toxic goiter under control, and from twelve to sixteen weeks is required for the nodular type. Exceptions to this rule were encountered, one notable example being the case of the 21 year old girl with diffuse toxic goiter who was treated for more than five months before she was stabilized. Considering the optimum daily dosage of thiouracil to be 600 milligrams and that of propyl-thiouracil 300 milligrams, the ratio of effectiveness of the latter to thiouracil is two to one.

Propyl-thiouracil, because of its low toxicity, affords a broader opportunity for study than any of the thiourea derivatives available to date. It is hoped that control of the hyperthyroid state over a minimum period of from eighteen to twenty-four months, or even longer, with this drug, will result in lasting remission.

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BISMUTH THERAPY OF VERRUCAE

ORAL ADMINISTRATION OF SODIUM BISMUTH TRIGLYCOLLAMATE (BISTRIMATE TABLETS)

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OF THE NUMEROUS preparations suggested to date for the oral therapy of verrucae, none has proven to be particularly reliable or efficient. Magnesium sulfate, arsenic and mercury all have been used with equivocal results. Lurie[1] and many others have had fairly satisfactory results with intramuscular injections of bismuth; however, Goodman and Greenwood[2] found injections of bismuth and of saline equally effective. Gross and Wright[3] reported that four of twenty cases of verruca vulgaris treated with Bistrimate were cured. Multiple verrucae, especially in children, frequently are encountered and the choice of therapy is often a disturbing problem. Cautery, injections and oral therapies advocated in the past have all had their percentages of cures, but there is still much to be desired. In the following clinical study, cases of verrucae were selected at random for oral administration of sodium bismuth triglycollamate (Bistrimate). The drug was administered in tablet form after meals. Each tablet contained 410 mg. of sodium bismuth triglycollamate equivalent to 75 mg. of metallic bismuth. The dose varied from a minimum of three tablets to nine tablets daily.

REPORT OF CASES

Case 1. C. R., aged 46, reported to the clinic with subungual verrucae on the fingers of both hands. Two Bistrimate tablets were prescribed twice daily. After continuing the drug for one month, the patient developed a stomatitis and a diarrhea. At that time the drug was discontinued. Two weeks later all verrucae had disappeared.

Case 2. M. D., aged 22, had verruca plana on her chin. Protiodide of mercury previously had been prescribed but was not tolerated because it produced abdominal cramps and diarrhea. Bistrimate tablets were prescribed. One month after taking the drug continuously, abdominal cramps recurred and the drug was discontinued. Verrucae at that time were flattened and hardly noticeable.

Case 3, 4, 5. Three children, members of the same family, reported to the clinic, all with verruca plantaris. Their ages were 6, 8 and 10 years. Bistrimate tablets, one after each meal, were prescribed for each child. One month later, verrucae on the feet of the 6 year old child had disappeared. Verrucae on the feet of the children 8 and 10 years of age were smaller but still present. Following this, these cases were lost from observation.

Case 6. E. M., aged 5, had verruca vulgaris on the forehead, lips and knees. Verruca plana juvenilis was present on the dorsum of both hands, and verruca filiformis was present on the child's cheeks. Three Bistrimate tablets per day were administered. After six weeks therapy all verrucae had disappeared.

Case 7. H. D. W., aged 15, reported to the clinic with verruca vulgaris. A total of thirty-seven verrucae were distributed on her fingers, hands, face and knees. Bistrimate tablets were prescribed with instructions to take two tablets after each meal. There was no evidence of verrucae at the end of two months.

Case 8. J. F., aged 8, entered the clinic with verruca

Bistrimate (Sodium Bismuth Triglycollamate) was supplied through the courtesy of Carroll Dunham Smith Pharmacal Co.
From the Department of Dermatology and Syphilology, St. Mary's Hospital Group of St. Louis University School of Medicine, Garold V. Stryker, M.D., Director.

vulgaris. There were six verrucae located on the vermillion border of the upper lip. Verrucae were also present on her right leg, left wrist and a finger of the left hand. Three Bistrimate tablets, after meals, were prescribed. Three weeks later all verrucae had disappeared.

Case 9. R. F., aged 16, reported to the clinic with eighteen verrucae on the hands, fingers, wrists and knees. No change was noted in the verrucae after nine Bistrimate tablets daily were given for seven weeks.

Case 10. W. B., aged 14, had twenty verrucae distributed on the hands, forearms and legs. They were of the verruca vulgaris variety. Previously, three verrucae had been removed by electrodesiccation; however, new verrucae appeared in the sites of removal. After seven weeks on Bistrimate tablets, one verruca had disappeared while the others appeared to be flattening and undergoing resolution.

Case 11. B. G. S., aged 23, reported to the clinic with five verrucae distributed on the fingers of his right hand. Seven weeks later, no change in the verrucae was noticed after having received Bistrimate tablets in the maximum dosage.

Case 12. V. T., aged 11, was first seen in May 1947 when a diagnosis of verruca vulgaris was made. Many verrucae were present on her face, knees and legs. In addition to roentgen ray therapy, protiodide of mercury, gr. ¼, was prescribed. No improvement was noticed with this regime so Bistrimate tablets, one after meals, was prescribed in July. Treatment was continued and all lesions had disappeared by November.

Case 13. M. H., aged 35, had verrucae on her chin and legs when seen in July 1947. Bistrimate tablets, six daily, were prescribed. Three weeks later all verrucae had disappeared.

Case 14. R. L., aged 14, received roentgen ray therapy for subungual verrucae in August 1947. Since improvement was minimal, Bistrimate therapy was substituted. By October 1947, no lesions remained.

SUMMARY

Of the fourteen cases of verrucae reported, eight were completely cured and no trace of the lesions was left; four showed definite improvement and two showed no improvement. In cases 1 and 2, it was necessary to withdraw the drug because of intolerance. However, in case 1, the verrucae disappeared entirely two weeks after cessation of therapy; and in case 2 there was definite improvement at the time the drug was stopped. No attempt was made to evaluate the role of psychotherapy in these cases.

CONCLUSION

In this series, therapy with oral bismuth in the form of sodium bismuth triglycollamate gave excellent results and is deemed worthy of a thorough trial, especially for multiple verrucae in children.

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HYPERPARATHYROIDISM

SUMMARY OF IMPORTANT FINDINGS IN A TEN YEAR STUDY OF A CASE

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After a disability extending for about ten years, probably due primarily to hyperparathyroidism, a patient sustained a fracture which led to the diagnosis of the true condition. Roentgen studies of other bones and chemical studies of blood and urine confirmed the diagnosis and impelled the first op-

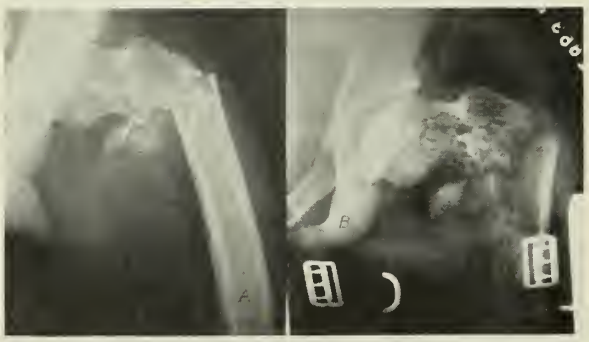


Fig. 1. A. X-ray appearance of left femur at the time of admission to Research Hospital January 3, 1936. The osteitis of shaft of femur is well shown extending up into the fracture site. It was on the basis of this roentgram by Dr. I. H. Lockwood that the diagnosis of hyperparathyroidism was made. This diagnosis was confirmed by blood and urine chemical studies and by x-ray studies of other bones and later by microscopic appearance of parathyroids removed at operation January 21, 1936, and August 22, 1938. B. Condition of left femur as shown by x-ray before effects of parathyroidectomy had become manifest, six days after operation. It is interesting to compare with the x-ray of January 3. Note the great amount of decalcification which has taken place in the three weeks since injury and hospitalization. (Interest in the systemic disease had resulted in neglect of the fracture alignment.)

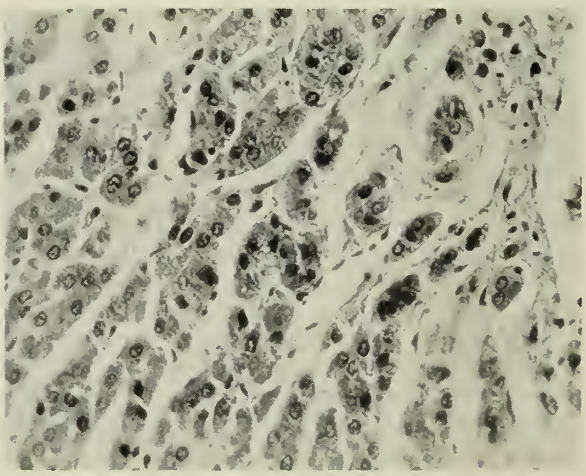


Fig. 2. Photomicrograph of parathyroid adenoma removed at operation on January 21, 1936. The pathologist, Dr. F. C. Narr, reported a minute lymph node adherent to the parathyroid tissue "in which there are epithelial cells which have acinar arrangement. I know of no histologic structure that resembles this. I therefore believe it metastatic malignancy."



Fig. 3. A. Lateral roentgram of the skull made a few days after admission to the hospital to demonstrate the mottled texture of the bone, with what appears to be a large area of absorption with cyst formation in the temporal bone near the orbit. Note that there is no thinning of the calvarium, but simply a generalized absorption of lime salts. B. Roentgram of skull made September 3, 1938. Dr. I. H. Lockwood reported as follows: "The lesion in the skull has apparently filled in entirely and disappeared and the changes over the vault of the skull have disappeared and the cranial bones have a normal appearance."

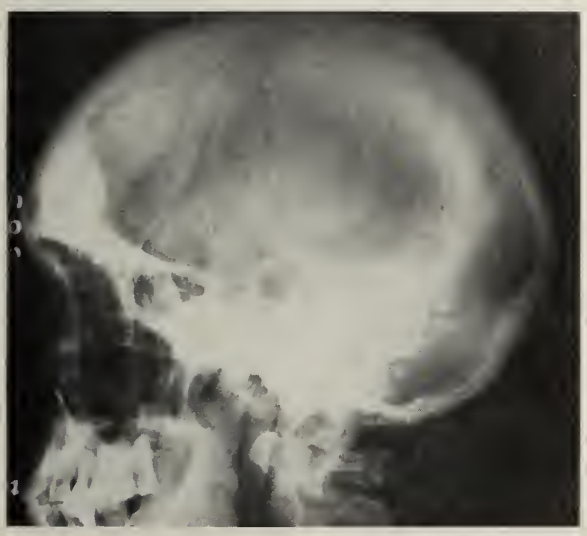


Fig. 4. Roentgram made ten years after the original study. Dr. I. H. Lockwood reported as follows (January 9, 1946): "A lateral negative of the skull shows evidence of a definite area of increased density in the frontal area at the base of the skull, and considerable increased density in the base of the anterior fossa of the skull. This is probably a healing of the old lesion found back in 1936. There is nothing in these negatives (skull, pelvis, left femur) that would make one think of the possibility of a parathyroid disease."

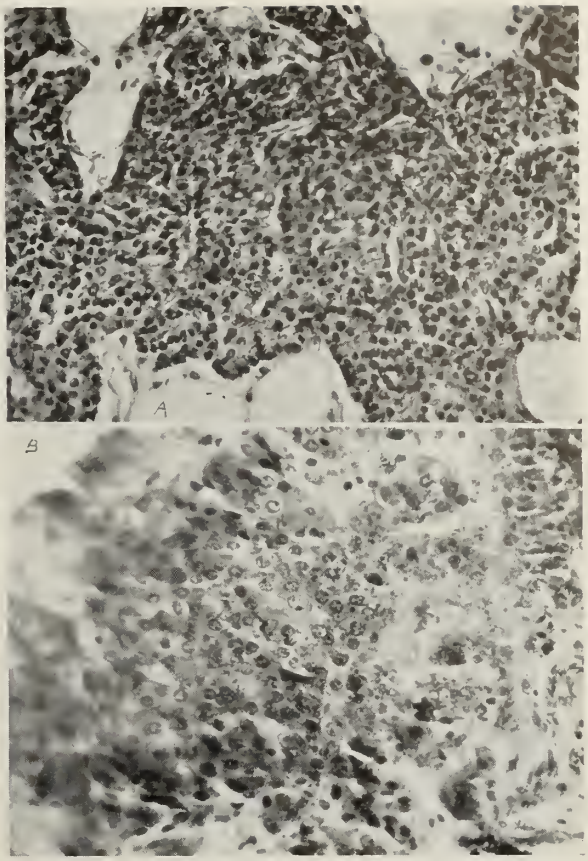


Fig. 5. A. Photomicrograph of section of one of the left parathyroid bodies removed August 22, 1938. "There are few fibrous trabeculae. The cells are quite uniform in size and shape. The majority are of the acidophilic (oxyphilic) type with only an occasional chief cell present." (Dr. F. C. Narr.) Portions of the left parathyroid were incorporated in atypical thyroid lobes which were described as "reddish, meatlike structures partially divided by septa into three lobes . . . covered by a tough translucent capsule." B. Another photomicrograph of tissue removed at second operation (August 22, 1938). The pathologist reported some hemorrhage and phagocytic cells containing hemosiderin. "There are also much blood pigment containing cells in the fibrous capsule which surrounds the parathyroid and appears to be part of the capsules of the attached thyroid. The cells of this parathyroid nodule are large, hypertrophic. There are more of the chief cells present. At places one sees occasional acidophilic cells which are columnar. . . . Diagnosis: Hypertrophy, parathyroid; hemorrhage, parathyroid." (Dr. F. C. Narr.)

eration on January 1, 1936, with immediate cessation of hypercalcemia and repair of the fracture. There was an immediate improvement in the patient's general health and chemical and roentgen ray studies revealed an approach to normal findings.

About a year after the operation, signs and symptoms of duodenal ulcer developed accompanied by a return of polyuria, polydypsia, loss of weight, anorexia and blood chemical findings much the same as were found at the time of removal of both right parathyroids.

Thirty months after the first operation, a second operation, with removal of all visible left parathyroid tissue with abnormal left thyroid lobes, was performed August 22, 1938, and in the subsequent years no signs or symptoms of overactive parathyroid have developed and the patient may be considered to have been cured of this condition with its accompanying bone changes and duodenal ulcer.

Damage to kidney parenchyma prior to the final eradication of hyperactive parathyroid has probably been irreparable as shown by a persisting high nonprotein nitrogent in the blood, an elevated blood pressure, albumin and casts in the urine and a moderate but persistent secondary anemia. The removal of abnormal thyroid tissue with inclusions of parathyroid has produced a lowered basal metabolic rate which requires administration of thyroid.

From the time of healing of the fracture of the left hip (June 1936) to the present time, the patient has been absent from his accustomed occupation only long enough to undergo and to convalesce from his second parathyroid-thyroidectomy in August 1938, a matter of two weeks.

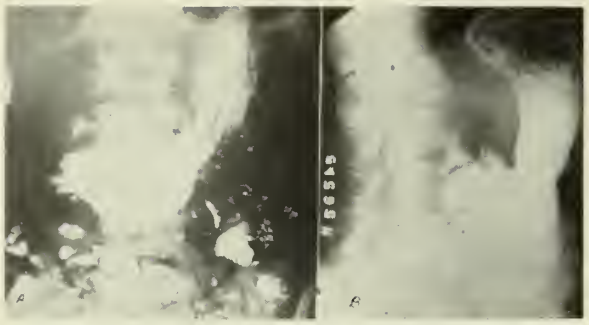


Fig. 6. A. Reproduction of roentgram at the fourth hour (April 26, 1938) showing barium retained in the duodenal deformity and about 50 per cent of the opaque meal remaining in the stomach. Same condition persisted into the sixth hour. Diagnosis of duodenal ulcer with retention was made by Dr. I. H. Lockwood. From the time of this study until July 1938, efforts to relieve the ulcer symptoms by diet and antiacids were slowly succeeding at expense of the patient's general wellbeing. B. Roentgram made in lateral projection of the stomach and duodenum after barium meal on January 15, 1946. Report of the roentgenologist (Dr. I. H. Lockwood) is quoted in full: "Examination of the stomach shows it within the normal limits of size, shape and position with good peristalsis and motility; there seems to be some slight irregularity of the duodenal cap although there is no evidence of irritability or spasticity at this time. This individual could have, at some time in the past, had an old duodenal lesion that is perfectly quiescent. Certainly there is nothing to suggest any activity and there is no evidence of obstruction."



Fig. 7. X-ray study of the pelvis and upper portion of both thighs made in January, 1946 was reported on as follows by Dr. I. H. Lockwood: ". . . there is a marked coxa vara as the result of the old fracture of the left hip. Union is prefect; no particular change in the bone density as far as any demineralization is concerned." Cystic change in the right ischium has not been altered in any particular degree for more than eight years of observation. It may be a part of the hyperparathyroid picture to the same extent as is the cystic change shown in roentgrams of the skull—frontal bone.

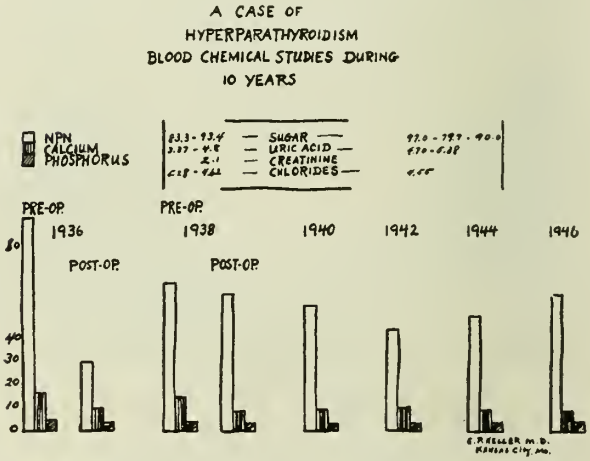


Fig. 8. Blood chemical studies during ten years in a case of hyperparathyroidism.

The incidental finding of duodenal ulcer is of particular interest in view of a recent report by H. Milton Rogers of two cases of duodenal ulcer at the Mayo Clinic in which acute hyperparathyroidism was found to be the prime etiologic factor. In a personal communication (February 2, 1946) Dr. Rogers states that a third case of primary hypertrophy of the parathyroid with coexisting duodenal ulcer has been found at Mayo Clinic in a little more than a year's time and is being reported by Dr. Raymond Keating and himself. He stresses the recent inclusion of the neck organs in necropsy examinations as responsible for their disclosures.

One is forced to the conclusion that there may be more than just a coincidence in the coexistence of duodenal ulcer and hyperparathyroidism and that acute hyperparathyroidism is not alone responsible for the development of ulcer, but ulcer may develop in the chonic state as well. Keating, Rogers and myself are convinced that hyperparathyroid disease exists much more often than it is recognized.

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Rogers, H. Milton: Duodenal Ulcer and Acute Manifestations of Hyperparathyroidism: Report of 2 Cases, J.A.M.A. **130**:22-28 (Jan. 5) 1946.

MORE CANCERS FOUND AT DETECTION CENTERS THAN EXPECTED

A nine-months' survey of cancer detection centers in one state shows that 10 to 15 times as many cancers are being discovered in male examinees, and twice as many in female, as would be expected from the general cancer prevalence rates by sex and age. These facts are revealed in a report by Howard W. Jones, Jr., M.D., and W. Ross Cameron, M.D., Baltimore, in the December 13 issue of *The Journal of the American Medical Association.*

The two doctors state that from November 1, 1946, to July 31, 1947, a total of 1,709 persons were examined in cancer detection centers in Maryland, 336 being men and 1,373 women. By means of the expected prevalence and detectability rates only 0.56 case of cancer would have been anticipated in the male and 4.9 cases in the female examinees. Actually eight cancers were found among the men and nine among the women.

Although a cancer detection center represents a case-finding clinic to which only persons who are free from cancer symptoms are supposed to be admitted for examination, the writers suggest that a high proportion of the patients come to such centers because of minor complaints or because of the occurrence of cancer in their immediate families. They are therefore not a true cross section of the population as a whole.

"An incidental, but important finding," the doctors also write, "was that 36 per cent of men and 51 per cent of women examinees were referred to their physician because medical or surgical conditions other than cancer were discovered."

MISTAKEN DIAGNOSES OF TUBERCULOSIS

RUBIN H. KAPLAN, M.D., *Excelsior Springs, Mo.*
AND
LOUIS LEVIN, M.D., *Excelsior Springs, Mo.*

THE DIAGNOSIS of pulmonary tuberculosis is simple and uncomplicated only if adequate positive data is readily obtained. The patient with obviously extensive chest film findings and sputum positive for tubercle bacilli presents no diagnostic problem. At that stage, with probable far advanced disease, he presents no therapeutic problem—the pulmonary disease is far advanced—the prognosis guarded.

With greater emphasis on early case finding with the physician now on the alert, the differential diagnosis in each case of pulmonary disease must and does include tuberculosis. The pendulum has swung so far that the diagnosis of pulmonary tuberculosis has been made when there has been no substantial evidence of that disease. This fact has been substantiated in a review of 431 consecutive admissions to the Veterans Hospital at Excelsior Springs from October 1, 1945, to September 30, 1946. Of these 431 patients sent in for the treatment of active pulmonary tuberculosis, twenty had no pulmonary disease and thirty-three had varied non-tuberculous pulmonary pathologic conditions.

The general public is more conscious of tuberculosis, of its symptoms, of its treatment and of its prognosis. Although the general outlook is now more cheerful, the patient and his family still fear the disease. Stigma and anxiety continue to be associated with it. A patient can be debilitated for life and be made an outcast from his own family and friends by an unsubstantiated and incorrect diagnosis of pulmonary tuberculosis.

Basing a diagnosis on suggestive history and symptomatology and equivocal or no chest film or laboratory findings should weigh heavily on the conscience of the offending physician. This not so conscientious physician is under the impression that he has fulfilled his duty adequately by tagging the patient with a diagnosis and leaves it to the sanatorium with its specialized facilities to do the rest. The mental shock to the patient and his family resulting from this incorrect diagnosis if considered at all is not given the important attention it merits.

In the majority of cases, pulmonary tuberculosis can be definitely ruled out by means of a chest film, tuberculin tests and sputa examinations. Yet as hospital statistics will indicate, many patients are admitted with a diagnosis of pulmonary tuberculosis who have no pulmonary disease, or pulmonary disease which can be differentiated readily from tuberculosis. With roentgen ray evidence of a pathologic condition differential diagnosis may be difficult. Continued clinical and laboratory studies are essential. Hospitalization for the necessary observation is mandatory. The differentiation between pulmonary tuberculosis and bronchogenic carcinoma, lung abscess, fungus infection, bronchiectasis, cystic disease of the lungs, silicosis or chronic pneumonitis necessitates the full use of all hospital diagnostic methods. Procrastination may preclude effective treatment.

If the diagnosis of pulmonary tuberculosis is based on inadequate study, and if no serious pulmonary disease exists, the patient may never be convinced that the original diagnosis was incorrect. Fear and lack of confidence in himself persists and may completely disrupt his ability to adjust to his previous routine. If he is not already a psychoneurotic, psychoneurotic tendencies may become manifest. The patient's future life may be altered irrevocably.

We are certain that most if not all physicians have treated patients who previously have been given a diagnosis of carcinoma or heart disease or syphilis which was not substantiated by a more complete examination. It is frequently difficult to convince these patients with minimal or no symptoms that they are ill and require treatment. It is even more difficult to convince them that the original diagnosis was incorrect. This holds true for tuberculosis. The body is healthy but the mind continues to have doubts and misgivings and the cloud of the incorrect diagnosis remains.

Both the patient and the physician can be mislead easily by symptoms suggesting tuberculous activity. Symptomatology is subjective, and its variation from fact, minimized or exaggerated, is bounded only by the patient's ability to be objective. The doctor can evaluate the history properly only if he has a thorough understanding of the patient's background and of his tendency to be factual. This is especially true if the physical findings are normal.

In the series of 431 cases who were admitted with diagnoses of pulmonary tuberculosis, fifty-three or 12.3 per cent were misdiagnosed. Of these fifty-three misdiagnosed cases, 52.6 per cent complained of cough, 29 per cent complained of expectoration and 29 per cent complained of weight loss. Other symptoms included dyspnea, fatigue, chest pains, anorexia, blood streaking, weakness, night sweats, fever, hemoptysis, wheezing and chills, in descending prominence varying from 16 per cent to 2 per cent in the last. In none was the history in itself adequate, even though at times it was very suggestive for the diagnosis of pulmonary tuberculosis. In a patient not previously

Presented at the joint meeting of the Missouri Chapter, College of Chest Physicians, and Missouri Chapter, American Trudeau Society, March 30, 1947, Kansas City.

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known to the physician, with findings equivocal or normal, a corroboratory chest film is a "must" before the diagnosis of pulmonary tuberculosis is made.

The following fifty-three cases, or 12.3 per cent of the admissions between October 1, 1945, and September 30, 1946, were all admitted with a diagnosis of active pulmonary tuberculosis. Despite indistinguishable histories and symptoms, the patients in the mistaken diagnosis group are divided readily into those with pulmonary parenchymal disease and those having essentially normal lungs. It is in this latter group that the error of commission is unforgivable.

Of the group with no parenchymal disease, the corrected diagnoses were as follows:

No pulmonary disease, 20.
Bronchitis, 4.
Rheumatic heart disease, 1.
Hemoptysis, cause undetermined, 1.
Pulmonary emphysema, 1.
Pulmonary calcification, 1.
Healed, primary, 1.
Fibrous, pleurisy, 1.

Of the group with parenchymal disease, the corrected diagnoses were:

Bronchogenic carcinoma, 5.
Silicosis, 3.
Cystic disease, 3.
Bronchiectasis, 2.
Lung abscess, 2.
Pulmonary involvement, type undetermined, 2.
Metastatic carcinoma, 1.
Lobar pneumonia, 1.
Loeffler's syndrome, 1.
Pneumonitis, type undetermined, 1.
Pulmonary fibrosis, 1.
Pulmonary actinomycosis, 1.

The practitioner is busy and truly has little time to take extensive detailed histories. Also, chest physical diagnosis is rapidly becoming a lost science. In this age of specialization, adequate training in the study of chest disease is attained only by few physicians. However, roentgen rays are universally and readily obtainable and are relatively inexpensive. Sputum examinations present little obstacle. The Mantoux test is a simple procedure.

A chest film to rule out pulmonary disease, a little positive reassurance from the doctor, and the patient is cured. All doubts and misgivings are dissipated. Fear of chronic invalidism with its attendant social problems are no more. The physician need spend little time with his patient to insure an adequate working diagnosis—far less than if he tends to shift the burden of responsibility to the sanatorium. His professional reputation certainly is not enhanced and the explanation is time-consuming and mutually unsatisfactory when the patient is discharged with no pulmonary disease found. The doctor has lost face and the patient mental balance, and much money has been spent unnecessarily.

Twenty-three patients, although found to have no pulmonary tuberculosis, had enough pulmonary pathologic condition to necessitate hospital observation. It was interesting to note that in the group of misdiagnosed cases many were transfrerred to the hospital with a diagnosis of active pulmonary tuberculosis from an outside hospital. The diagnoses in these hospitals were based on history, symptoms and chest film findings. Sputa were never found to be positive for tubercle bacilli. Even when adequate facilities for differential diagnoses apparently were available, chest pathologic condition was synonymous with pulmonary tuberculosis.

Time will not permit a review of every case in the series admitted with a misdiagnosis of active pulmonary tuberculosis. However, representative cases of the various groups will be summarized.

Of the five cases admitted with a diagnosis of active pulmonary tuberculosis and later found to have bronchogenic carcinoma, the following is a representative case.

REPORT OF CASE

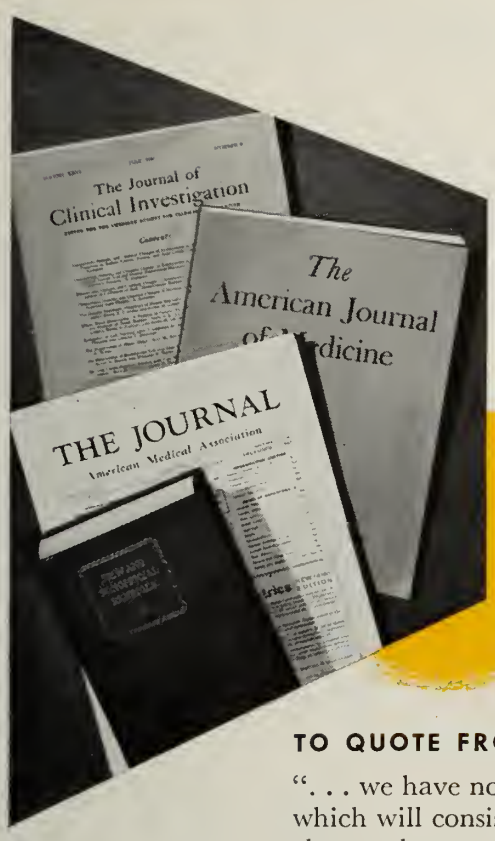
G. J., a 44 year old white male, was admitted to the Veterans Hospital on January 9, 1946, for the treatment of active, pulmonary tuberculosis. History revealed that the patient was apparently in good health until about two weeks prior to admission, when he was awakened from his sleep because of blood pouring from his mouth. The blood was bright red, somewhat frothy and estimated at about one half pint in volume. He was taken to a hospital where a diagnosis of active pulmonary tuberculosis was made, despite negative sputa, and on January 9, 1946, he was transferred to this hospital for further treatment. His only complaint upon admission was recent hemoptysis. He gave a history of a moderate cough of seven years duration which he always thought was due to a mild bronchitis. At this hospital all sputa examinations were negative for acid-fast bacilli on smears, concentrates, culture and guinea pig inoculation. Examination of the blood revealed 80 per cent hemoglobin, 3,680,000 red blood cells, 12,600 white blood cells and a normal differential. Mantoux test was positive, coccidioidin negative. Chest roentgen ray revealed a mottled, linear, medium, patchy infiltration in the right upper lobe field, apparently just above the minor interlobar pleural fissure, which was seemingly thickened and curved upward suggesting some degree of atelectasis of the upper lobe and compensatory emphysema of the middle lobe.

Bronchoscopy was recommended but the patient refused to accept this procedure. On March 21, 1946, he finally consented. This was done, and among other things, a thick hemorrhagic plug was noted projecting from the lateral wall at the origin of the right main bronchus. This was coughed up through the bronchoscope and was noted to contain tissue. Microscopic examination of this revealed carcinoma of the bronchus with acute hemorrhagic inflammatory reaction. Following establishment of this diagnosis, the patient was permitted to return home in order to take care of some essential business before undergoing surgery. However, he failed to return and was discharged on March 26, 1946, as A.W.O.L.

There was one case of pulmonary actinomycosis.

REPORT OF CASE

F.L., a 40 year old white male, gave a history of being discharged from the Army in 1943 because of bronchial asthma, and since then he had had a chronic cough, expectoration and blood streaked sputum. On September 21, 1945, he finally entered a hospital where, despite negative sputa, he was given a diagnosis of active pulmonary tuberculosis and transferred to this hospital on October 17, 1945. Upon admission, the patient's general condition was poor. He was very toxic



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1. *Combined Staff Clinics of the College of Physicians and Surgeons, Columbia University: Am. J. Med.* 1:675 (Dec.) 1946.
2. *Comroe, B. I.: J.A.M.A.* 128:848 (July 21) 1945.
3. *Council of Pharmacy and Chemistry: New and Nonofficial Remedies, 1947, Philadelphia, J. B. Lippincott Company, 1947, p. 477.*
4. *Freyberg, R. H.; Block, W. D., and Levy, S.: J. Clin. Investigation* 20:401 (July) 1941.

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

and moribund. The Mantoux test was positive. All sputa examinations were negative for acid-fast bacilli, but positive for fungi. Chest roentgen ray revealed a pneumonic and patchy infiltration involving the left midlung field and the right upper lobe and both bases. Patient rapidly went down hill and expired on October 28, 1945, eleven days after admission. Autopsy revealed pulmonary actinomycosis.

There were two cases of lung abscess.

REPORT OF CASE

U. S., a 47 year old white male, was admitted to this hospital on August 8, 1946, for the treatment of moderately advanced active pulmonary tuberculosis. Onset of symptoms occurred in March 1946, when the patient complained of a bad cold which caused a productive cough, fever and pain in the right chest. A local physician told the patient there was a spot in his right lung and advised hospitalization. By that time, the patient had lost some weight, he had a poor appetite and had experienced night sweats. Patient was admitted to a hospital where all sputa studies failed to reveal acid-fast bacilli. Nevertheless, active pulmonary tuberculosis was diagnosed, and he was transferred to this hospital for treatment on August 9, 1946.

At this hospital, all sputa were negative for acid-fast bacilli on concentrates, cultures and guinea pig inoculations. Patient had a severe cough productive of about 500 cc. of mucopurulent sputum daily. There was no characteristic foul odor of the sputum. Chest roentgen ray revealed heavy patchy infiltrations in the right lower lobe field, from the diaphragm to the third anterior rib plane, medium infiltrates of patchy character also were present in the right upper lobe field. There were two translucencies, representing a bilocular cavitation, with a total diameter of approximately 4 cm. in the right upper lobe. Bronchoscopy merely revealed mucoid secretions from the right bronchi. The lumena appeared normal.

Suppurative disease of the right lung was diagnosed, and the patient placed on aerosol penicillin therapy. This soon resulted in marked clinical improvement, a gain in weight and almost complete disappearance of the mucopurulent sputum and almost complete resolution of the lesion as viewed on subsequent roentgen rays. Although bronchograms revealed bronchiectatic changes in the right lung, this patient was discharged from the hospital on November 15, 1946, to be reexamined in three months.

Of the three cases of cystic disease of the lungs, a representative case follows.

REPORT OF CASE

A. B., a 52 year old white male, complained of a productive cough, weight loss, chronic fatigue and blood streaked sputum. At that time he entered the hospital where, despite negative sputa, he was given a diagnosis of far advanced, active tuberculosis, and after a short time he left the hospital. On June 13, 1946, because of recurrence of symptoms and increased blood spitting, he entered this hospital. Here, all sputa examinations were negative for acid-fast bacilli on smears, concentrates, cultures and guinea pig inoculations. Smears and cultures of sputa were negative for fungi. Mantoux test was positive on second strength. Histoplasmin and coccidioidin tests were negative. Chest roentgen ray revealed multiple thin walled cavitations in the left upper lobe and apex and in the right infraclavicular area, as well as nodular and patchy infiltrates in both upper lobe fields.

The patient was given a diagnosis of cystic disease of the lungs and placed on symptomatic therapy. On August 9, 1946, when the general condition of the patient improved, he was discharged from this hospital. On September 14, 1946, he returned because of a recurrence of blood streaked sputum. He was again treated symptomatically, and on November 12, 1946, he was again discharged in fairly good clinical condition.

The single case of Loeffler's syndrome follows:

REPORT OF CASE

G. P., a 30 year old white male, was first hospitalized on January 28, 1946, complaining of chest pain, cough, expectoration, blood streaked sputum and weight loss. He was given the diagnosis of moderately advanced, active, pulmonary tuberculosis and eosinophilia, cause undetermined. He was treated symptomatically, which resulted in complete disappearance of complaints and some resolution of the lesions on roentgen ray, and on March 9, 1946, he was transferred to this hospital for continuation of treatment.

At this hospital, all sputa examinations were negative for acid-fast bacilli on smears, concentrates, cultures and animal inoculations. The blood count differential was essentially normal except that it showed 17 per cent eosinophils. (In the previous hospital his eosinophil count ranged from 25 per cent to 58 per cent.) Repeated examinations of the feces were negative for parasites. Sputum smears and cultures were negative for fungi. Skin tests for trichinosis and coccidioidin were negative. The Mantoux test was positive. Chest roentgen ray revealed soft, medium, patchy infiltrates disseminated throughout the left lung. The right hilar shadow and pulmonary markings of the right lower lung field were increased. Roentgen ray, as compared with the original film, showed some resolution of the lesion. Loeffler's syndrome was diagnosed, and the patient was treated supportively and observed further. On April 12, 1946, when the roentgen ray showed almost complete resolution of the lesions and the eosinophil count was down to 3 per cent, and since the patient was afebrile and asymptomatic, he was discharged from the hospital.

On February 26, 1947, he returned to the hospital for a post-hospital follow-up. All examinations at that time were normal and roentgen ray revealed complete resolution of the lesions.

The single case of bronchogenic carcinoma with pleural effusion follows.

REPORT OF CASE

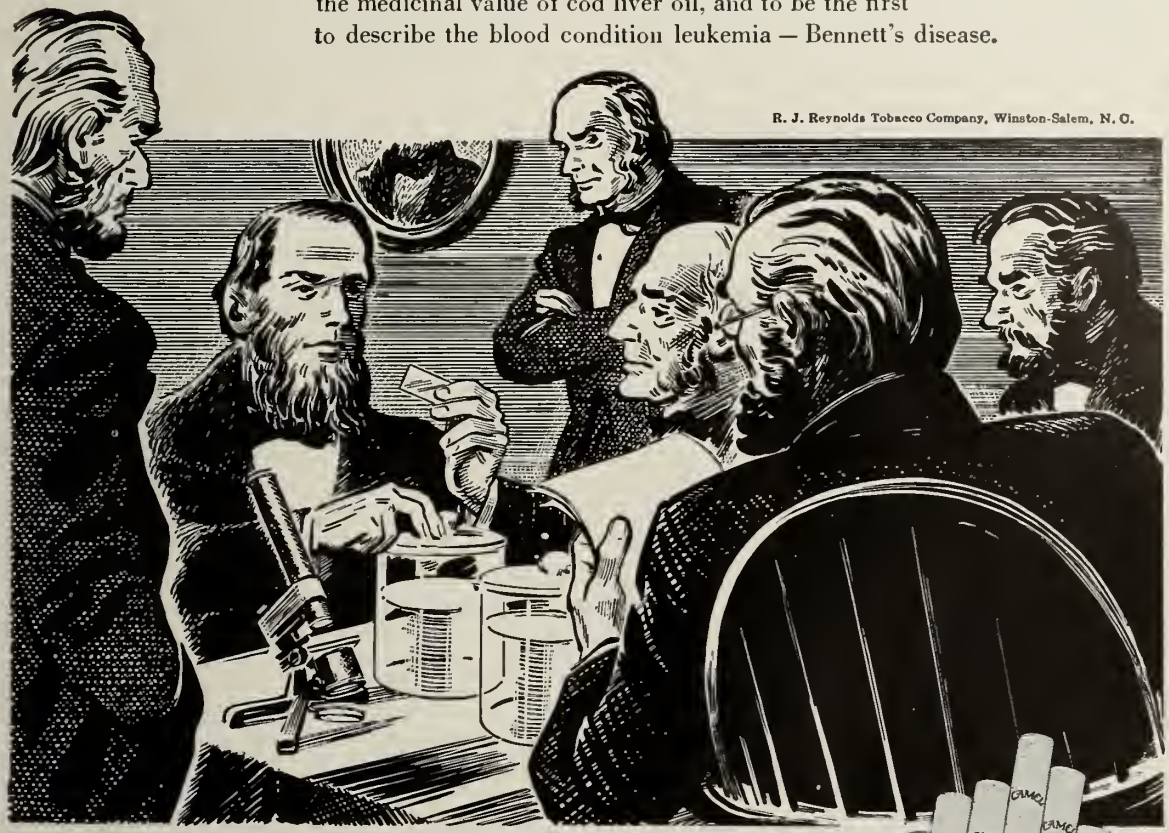
S. B., a 51 year old white male, visited his private physician in February 1945 because of anorexia, cough and vomiting spells. Medication was prescribed with some symptomatic relief. However, he grew progressively weaker and began to lose weight. On November 16, 1945, he was admitted to this hospital for the treatment of pulmonary tuberculosis. Upon admission, examinations revealed a toxic and underweight white male, bedridden. All sputa examinations were negative for acid-fast bacilli on concentrates, culture and animal inoculations. Sedimentation index was 16. Chest roentgen ray revealed the interspaces over the right chest narrowed and a heavy pleural opacity obscuring the lower two thirds of the lung field. This density suggested pleural fluid. Aspirations revealed a purulent fluid in the right chest. However, parenchymal detail, after aspirations, were still obscured by the rather homogenous opacity of the right lung. The fluid was negative for acid-fast bacilli. Bronchoscopy on December 6, 1945, revealed a tumor about 2 mm. below the right upper lobe bronchus partially occluding the right main stem bronchus. This tumor bled easily. Biopsy of this tumor revealed a squamous cell cancer. Since the patient was not eligible for treatment in a Veterans Hospital, on March 6, 1946, he was transferred to the Ellis Fischel Hospital, Columbia, Missouri, for treatment of his bronchogenic carcinoma, probably inoperable.

There was one case of lobar pneumonia.

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REPORT OF CASE

C. C., a 52 year old white male, was admitted to this hospital on February 10, 1946, for the treatment of active pulmonary tuberculosis. History revealed that he apparently was in good health until two weeks prior to admission, when he developed symptoms of an upper respiratory infection as well as chills and some blood streaked sputum. Upon admission, he complained of cough, fever and pain in the right lower chest. He was afebrile. All sputa examinations were negative for acid-fast bacilli on smears, concentrates, culture and guinea pig inoculation. The blood count and differential were within normal limits. Chest roentgen ray revealed a patchy infiltration with considerable coalescence involving most of the right upper lobe. Pneumonia of the right upper lobe was diagnosed, and the patient placed on supportive therapy. He was treated supportively and made an uneventful recovery. This resulted in complete resolution of the pneumonic process and, on March 20, 1946, he was discharged from the hospital.

Of the four cases of bronchitis admitted to this hospital for the treatment of active pulmonary tuberculosis, the following is a representative patient.

R. B., a 55 year old white male, was admitted to this hospital on October 8, 1945, for the treatment of pulmonary tuberculosis. The patient stated he was told he had pulmonary tuberculosis in 1925, and he was hospitalized at that time for about three months. He also stated that about nine or ten years ago, he developed a cough which still persists. Upon admission, he complained of a chronic cough and pain in the right shoulder and back. All examinations were normal. Sputa were negative for acid-fast bacilli on smears, concentrates, culture and guinea pig inoculation. Chest roentgen ray in 1937 when patient was hospitalized here for chronic appendicitis was essentially normal, and roentgen ray during this admission was also found to be normal. Bronchograms were negative for bronchiectasis. During the patient's stay in this hospital, he had mild attacks of asthma which necessitated the administration of adrenaline, with prompt relief, the seizures occurring especially at night. On October 24, 1945, the patient was discharged from the hospital with a diagnosis of chronic bronchitis, asthmatic type.

REPORT OF CASE

The following case represents one of the twenty patients admitted to this hospital for the treatment of active pulmonary tuberculosis and in whom no pulmonary tuberculosis was found.

REPORT OF CASE

L. G., a 48 year old white male, was admitted to this hospital on November 14, 1945, for the treatment of active pulmonary tuberculosis. The patient stated that in 1936 his private physician told him that he had healed pulmonary tuberculosis and recommended that he take it easy. In February 1945, he stated he felt badly and was spitting up a little blood. Finally, on November 14, 1945, he entered this hospital complaining of a chronic cough, expectoration, a tight painful feeling under his breast bone, night sweats and a loss of thirteen pounds in the last ten months. Examinations here were all normal. All sputa examinations were negative for acid-fast bacilli on concentrates, cultures and animal inoculations. His sedimentation index was 8. Second strength Mantoux was positive. Roentgen ray of the chest revealed no evidence of pulmonary involvement. Bronchoscopy was negative. Smears obtained on bronchoscopy were also negative for acid-fast bacilli. Patient therefore was discharged with a diagnosis of no pulmonary tuberculosis found on February 21, 1946.

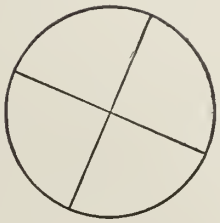
Papers similar to this one are not unique. Misdiagnoses are not unusual in any phase of medical practice. Where treatment is empirical and not specific, confidence in the physician, some well chosen advice and perhaps some medication are all that is necessary for a cure. And truly this pertains in the overwhelming percentage of ills. However, in those medical conditions in which definitive therapy is imperative, in which public health aspects are of paramount importance, a correct diagnosis is the moral responsibility of every ethical physician.

This paper is not an attempt at censure. The actual number of mistaken diagnoses is not of tremendous magnitude. However, because of the psychic effect of an incorrect diagnosis, because of the relatively specific therapy available, because of the public health angle and because the number of tuberculosis beds are and will continue to be inadequate, every practitioner should establish a precise diagnostic routine in every patient with a presumptive chest disease.

In the incipient, as Pinner uses the term, and probably minimal case of pulmonary tuberculosis, symptomatology tends to be vague and at times misleading. G.I. complaints are not uncommon. The history and symptoms are essentially nonspecific and an adequate evaluation is often difficult unless correlated with more specific findings. Chest physical findings are frequently entirely absent or, if present, are so well localized to the small bronchopneumonic infiltration that only a most painstaking and thorough detailed examination will yield any determinative results. In these early cases, reliance on the chest film for evidence of pulmonary disease is obligatory. A negative film precludes parenchymal disease. Conversely, a positive film is assurance of lung pathologic involvement. With roentgen ray evidence of disease, the question of differential diagnosis is now pertinent. A Mantoux test (the intermediate strength of P.P.D., as recommended by Furculow is used in this hospital) is the next step. If no skin reaction results, a diagnosis other than tuberculosis must be entertained. If positive, tuberculosis is still the most likely choice. Sputum examinations are an integral part of the examination. In the early minimal case, a routine smear for acid-fast organisms is in all likelihood a waste of time and effort. If negative, as it will be in practically all cases, it is only a false reassurance for both the doctor and the patient. Even concentrates, using anywhere from twenty-four to seventy-two hour sputum volumes, are only occasionally confirmatory in these early cases. Much greater percentages of corroboration of the diagnosis can be obtained by cultures and guinea pig inoculation. If the expectoration is scanty, a gastric lavage is indicated. It is true the latter laboratory methods require not only trained personnel but equipment not often found in the practitioner's office. The public health departments' facilities are available, however, as are those of private laboratories within the city. Every approach must be exhausted and positive evidence must be obtained before the diagnosis of pulmonary tuberculosis is made. It is wiser to label the pulmonary



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[1]Harris, S. C.; Ivy, A. C., and Searle, L. M.: THE MECHANISM OF AMPHETAMINE-INDUCED LOSS OF WEIGHT: A Consideration of the Theory of Hunger and Appetite, J.A.M.A. 134:1468 (Aug. 23) 1947.

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condition as of undetermined etiology and hospitalize the patient for further study and observation than to make the unequivocal but unproven diagnosis of pulmonary tuberculosis.

In the group with positive Mantoux test, suspicious history but negative chest films, as found in twenty of our cases, imposing a tuberculous diagnosis is a desecration of medical responsibility. Reassurance and, at most, office observation should suffice.

SUMMARY

1. The dangers of stigmatizing nontuberculous patients as cases of active pulmonary tuberculosis are stressed.

2. The importance of a history, chest roentgen rays, tuberculin tests, sputa examinations and differentiating the various types of pulmonary diseases also are stressed.

3. Four hundred and thirty-one consecutive patients, admitted to the Veterans Hospital, Excelsior Springs, from October 1, 1945, to September 30, 1946, as active cases of pulmonary tuberculosis were surveyed and, of these, fifty-three or 12.3 per cent, were found to have had nontuberculous pulmonary pathologic conditions, or no pulmonary involvement.

4. Reference is made to the similarity of symptoms in practically all types of pulmonary diseases.

5. Summaries are given of patients representative of the various groups of diseases misdiagnosed as cases of active pulmonary tuberculosis.

Veterans Hospital

ABSTRACTS AND DIGESTS

TUBERCULOSIS ABSTRACT

Issued Monthly by the National Tuberculosis Association. Vol. XX, No. 12, December, 1947.

BCG VACCINATION

There was a time when even to mention the use of BCG vaccination as a protection against tuberculosis provoked violent controversy. This procedure, introduced in France after the first World War, employs as a vaccine an attenuated strain of the tubercle bacillus known as Bacillus Calmette Guérin to build up resistance to more virulent organisms of the same species. The lack of controls and of adequate statistical evidence in the early work in Europe made American students of tuberculosis understandably cautious in their acceptance of BCG. Moreover, there was ample evidence that the methods of control already in use in the United States were doing more to control tuberculosis than even its most ardent proponents could claim for BCG vaccination.

That BCG is again being discussed as a practical public health measure is due largely to the recent publication of four experimental studies which seem to show that BCG may have real value under certain circumstances. Aronson and Palmer have reported favorably on six years' experience with a group of North American Indians who were vaccinated with BCG.

The experience of Ferguson who used BCG vaccine with the nurses and attendants in eight general hospitals and tuberculosis sanatoriums in the province of Saskatchewan, Canada, seems to show that BCG immunization is effective in affording a measure of protection to groups subjected to special hazard.

Holm has reported beneficial results from the use of BCG in Denmark where it is employed extensively with tuberculin negative individuals to prevent dangerous primary infections. During the course of immunization, the tuberculin reaction usually changes from negative to positive.

In contrast to these findings, Levine and Sackett, who studied carefully the results of vaccinating several hundred New York City infants, concluded that "as a public health measure the routine vaccination with BCG of children from tuberculous homes is probably of less advantage than removing the tuberculous case from the home."

As a result of accumulated new evidence the Tuberculosis Control Division of the U. S. Public Health Service invited leaders in tuberculosis work to a conference on BCG vaccination, held in Washington, D. C., on September 7, 1946. The purpose was to evaluate the reported studies with BCG so as to determine what use, if any, could be made of this procedure and what conditions would be most favorable for its employment.

Those attending the conference were: Dr. J. Burns Amberson, College of Physicians and Surgeons, Columbia University, New York; Dr. Joseph D. Aronson, Henry Phipps Institute, Philadelphia; Dr. Howard W. Bosworth, Barlow Sanatorium, Los Angeles; Dr. Charles A. Doan, College of Medicine, Ohio State University, Columbus, Ohio; Dr. Johannes Holm, State Serum Institute, Copenhagen, Denmark; Dr. Esmond R. Long, Henry Phipps Institute, Philadelphia; Dr. Jay A. Myers, University of Minnesota, Minneapolis; Dr. David T. Smith, Duke University, Durham, N. C.; Dr. Henry Stuart Willis, West North Carolina Sanatorium for the Treatment of Tuberculosis, Black Mountain (formerly of William H. Maybury Sanatorium, Northville, Mich.); and Dr. J. C. Yuan, National Institute of Health, Nanking, China.

The Public Health Service was represented by Doctors Herman E. Hilleboe and Carroll E. Palmer of the Tuberculosis Control Division, and Dr. Milton V. Veldee, Biologics Control Laboratory of the National Institute of Health, Washington, D. C.

During the conference a careful review of all investigations with BCG was made and there was a general discussion of the entire problem of BCG vaccination. It was agreed that there have been no proved cases of progressive tuberculosis from BCG vaccination. It was concluded that BCG vaccination appears to confer increased resistance to

tuberculosis for the relatively short period of time covered in the studies.

The following conclusions and recommendations were made by the conference and the policy outlined was later approved by Surgeon General Thomas Parran for the U. S. P. H. S.:

1. BCG vaccine should not be made commercially available at present.

2. From studies presented at the conference, it appears that BCG vaccination confers increased resistance to tuberculosis for the limited period of time covered in these studies.

3. Medical literature fails to reveal any proved cases of progressive disease as a result of BCG vaccination.

4. BCG vaccination (properly administered) can be done without causing severe local reactions.

5. The intracutaneous method of vaccination is recommended for use at present.

6. In the studies presented, BCG vaccination converted a large percentage of nonreactors (to the tuberculin test) into reactors.

7. Need for revaccination and time interval between vaccination require further study.

8. It was recommended that a single laboratory be established by the Tuberculosis Control Division to produce BCG vaccine for the whole country for use in research programs proposed at this conference. (The daily press has since reported that the designated laboratory is that of a new tuberculosis research hospital to be constructed by the University of Illinois professional schools, in Chicago.)

9. Extensive investigations should be carried on cooperatively with recognized research groups throughout the country during the coming years, especially in population groups highly exposed to tuberculous infection.

10. It was recommended that the Tuberculosis Control Division set up a controlled study in a community containing 100,000 or more people, to determine immediate and long-range results.

11. Further research is strongly recommended to determine the efficiency of the vaccination and also to attempt to develop a vaccine composed of dead bacilli. It was recommended that methods be developed to standardize technics of preparation of a potent and stable vaccine for use in the United States and if possible throughout the world.

The way has now been cleared for an extensive study of BCG in this country. With special groups such as the North American Indians, inmates and employees of mental hospitals and certain racial and professional groups where the morbidity and mortality from tuberculosis are known to be high, there now seems justification for a trial of BCG. It is not expected to take the place of known and proved methods for controlling tuberculosis—but BCG may well be an added weapon against an old enemy.

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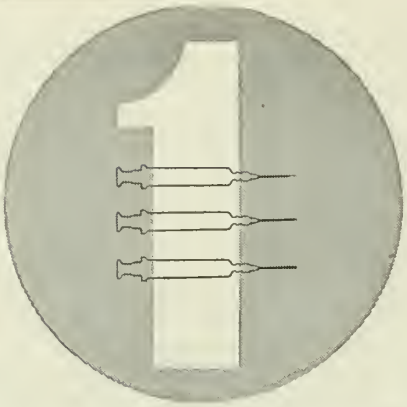
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Suggested Reading:

1. Aronson, Joseph D., and Palmer, Carroll E., Pub. Health Rep., June 7, 1946, 61:802.
2. Ferguson, R. G., Can. Jour. Pub. Health, Nov., 1946, 37:435; and Amer. Rev. Tuber., Oct.-Nov., 1946, 54:325.
3. Holm, Johannes, Pub. Health Rep., Sept. 6, 1946, 61:1298.
4. Levine, Milton I., and Sackett, Margaret F., Am. Rev. Tuber. June, 1946, 53:517.
5. Hilleboe, Herman E., Amer. Rev. Tuber., March, 1947, 55:294.
6. Preas, Sally, Milbank Mem. Fund. Quar., April, 1947, 25:215.
7. Editorial, Amer. Jour. Pub. Health, March, 1947, 37:307.
8. Editorial, J. A. M. A., Nov. 9, 1946, 132:581.

TUBERCULOSIS ABSTRACTS

Issued Monthly by the National Tuberculosis Association. Vol. XXI, No. 1, January, 1948.

THE DIAGNOSIS OF ACTIVITY IN PULMONARY TUBERCULOSIS

There is no single word in the vocabulary of clinical tuberculosis more widely employed nor more widely misunderstood than the word "activity." The ancient fallacy still persists that rales arise in moisture, which signifies inflammation and hence, activity. Another more dangerous fallacy is that activity is usually accompanied by slight changes in temperature, pulse, weight, appetite and physical energy.

The two essential requirements of a scientifically sound and clinically useful concept of activity are that it must be securely based on the anatomic state of the tuberculous lesions and must also be synonymous with need for treatment. Such a concept must include three distinct groups of cases: those which show anatomic progression; those which are anatomically stationary but not healed; and those which are retrogressive but not yet safely healed.

In determining whether or not a case requires treatment, the symptoms, physical signs, laboratory data, and X-ray picture may all be used—or misused.

The symptoms of pulmonary tuberculosis are familiar to all physicians. When a group of them is present there is usually no doubt about activity. When only one or two of them are present they may be erroneously attributed to the minimal lesion shown in the X-ray film. Serial films are the only safeguard against this error.

A more common and more serious error is to exclude activity because of the absence of symptoms. It cannot be emphasized too strongly that tuberculosis, both in its onset, and during the early period of relapse, is characteristically a symptom-free disease. To depend upon symptoms, or to await the development of symptoms, is to lose the most favorable moment for treatment. Surveys have shown that when the diagnosis is based upon symptoms, 87 per cent of the cases will have advanced disease. Increasing numbers of hospital beds are filled with patients whose symptom-free, early disease was discovered in a survey or induction examination a year or so earlier, but who refused treatment and continued to work until they felt sick and had advanced disease. The public requires education on this matter; let us hope that most of it will be forthcoming from physicians.

Physical signs are of still less value than symptoms in determining activity. Inspection, palpation, and percussion are not to be trusted and auscultation is but little better. Coarse, or moderately coarse, moist rales, do usually indicate activity. They are often absent, even in far-advanced disease. Conversely, rales of the fine, or moderately coarse, dry type are often present throughout the entire life of a person with well-healed tuberculosis.

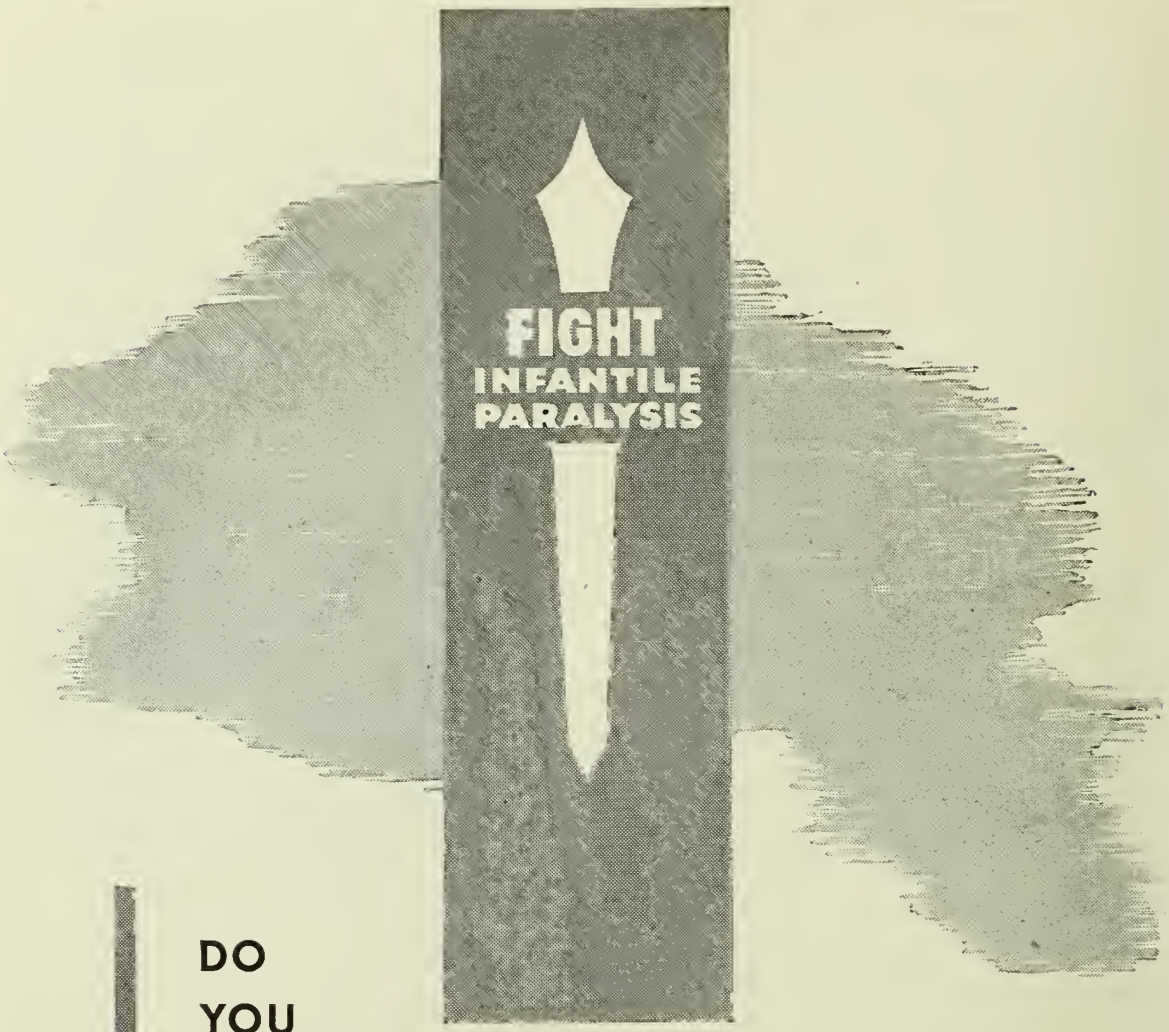
Like symptoms and physical signs, the laboratory helps us out by confirming a suspicion of activity, but does not exclude it. The finding of tubercle bacilli in the sputum, or in the gastric contents is always an indication for treatment and careful search should never be neglected.

Blood studies as a guide to activity are of little use to the doctor in practice. Most clinicians agree that the X-ray picture is a more accurate, sensitive, and dependable barometer of intrapulmonic weather than the blood picture.

The superiority of the X-ray film over other guides to activity in pulmonary tuberculosis makes it important that we recognize its limitations and use it to the greatest advantage. It requires little experience for anyone to learn to recognize the "soft" shadows, with indistinct borders which signify the active exudative, pathologic reaction, and the "hard" shadows, partly or largely linear and with sharply defined borders, which signify a well-healed fibrotic reaction. Between these two extremes is a large group of cases in which the most experienced and expert interpreter will be unable to differentiate active from inactive disease by a single film. In these cases there is no substitute for the careful and detailed comparison of serial films made at intervals of one to three months.

In making comparisons of films it is important to keep in mind certain sources of error. The degree of exposure, the depth of inspiration and position of the patient in relation to the casette may give illusory effects if the films being compared are not carefully checked for these factors. Slight differences in projection angles or changes in the position of the clavicles may reveal shadows which were partially concealed in the earlier film, thus giving the illusion of progressive disease or *vice versa.*

The Diagnosis of Activity in Pulmonary Tuberculosis (with case reports and illustrative films), Raymond C. McKay, M.D., Postgraduate Medicine, May, 1947.



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JANUARY, 1948

EDITORIALS

DOCTORS GROW OLDER

Is cardiovascular disease an occupational hazard peculiar to physicians? Are doctors dying earlier now than formerly? To answer these questions, Reginald Fitz, *Archives Internal Medicine* 76:210 (October) 1945, has studied the mortality tables for physicians found in the *Journal of the American Medical Association.*

In his conclusions, which are interesting and offer a degree of comfort, he reveals that year by year more physicians reach the age of 60. The total number living beyond 60 is increasing steadily and a greater number reaches 70 and 80.

Though vascular disease, a common cause of death among physicians, is increasing in frequency, the relative number of deaths from all causes is diminishing. The reduced mortality, especially noticeable in those less than 40, is perceptible in those beyond 60. If deaths from cardiac, renal and cerebral vascular diseases are grouped, physicians between 40 and 60 years of age appear to die a little more commonly from these causes than do members of the general white male population, probably because they have a better chance of avoiding earlier death from other causes. Fitz believes as the profession grows larger and older, mortality from vascular disease will increase.

"THE TIME HAS COME . . ."

"The time has come . . ." to commence plans to attend the 90th Annual Session of the Missouri State Medical Association. The program, which appears on page 44, will "speak of many things" and few physicians will fail to find presentations on the program that will not be of value. Also, many physicians will be able to contribute to the value of the program through the discussions.

The session will be held in the Jefferson Hotel, St. Louis, from March 14 to 17. Reservations for hotel accommodations should be made early and on page 60 will be found information on hotel accommodations and rates. This page may be used in place of a letter and sent to the hotel of choice.

The House of Delegates will convene on Sunday, March 14, at 2:00 p. m. for the first session and at 4:30 p. m. on Monday. The final session of the House of Delegates will be held Wednesday afternoon, March 17.

Scientific papers will be presented Monday morning and afternoon, all day on Tuesday and on Wednesday morning. The Banquet in Honor of Past Presidents will be held as customarily on Monday evening.

Mark the date, make the reservation and plan on a valuable, enjoyable 90th Annual Session.

PUBLIC RELATIONS

The following editorial, written by Vincent T. Williams, M.D., appeared in the December 6 issue of the *Jackson County Medical Society Weekly Bulletin.*

"We Moderns

"Science is a wonderful thing. It has brought comforts and convenience to us which were totally unknown or—in most instances—almost undreamed of by our forefathers. And, while no one may justly deprecate the good things scientific investigation has brought us, where will this insatiable tendency to approach life with the scientific attitude lead us?

"Every day new evidences are observed wherein we moderns depend more and more on gadgets and trinkets for even the mere fundamental necessities of living. In our various fields of activity we all are becoming specialized to a high degree of inadequacy. School kids do not learn to spell nowadays and the standard rebuttal from the proponents of current educational technics is: 'Your child must be superior in education and hence need not learn to spell. He can hire somebody to do that.' As if this, in the way of a reply, answered anything!

"We can almost see that tall, gaunt, worried and heart-sick man as he rode toward Gettysburg. He had no dictaphone, no blonde stenographer, no 'ghost writer,' none of the modern appurtenances of a truly great state speech-making. And yet what a honey he scribbled out on the back of an old envelope.

"In the field of medicine, behind the current furore for millions of dollars for research, we see the shadows of the Kochs, the Pasteurs, the Listers, the Semmelweisses and the Flemings. Were these men, who contributed such epochal efforts, esconsced in platinum lined ivory towers; were their best investigative efforts proselytized by overflowing coffers? No, obviously the results they achieved were a unique combination of brains, ideas, persistence and the will to do!

"In a similar vein, we moderns in medical practice find ourselves in this predicament: The old-time affection between physicians and patients has progressed inversely as we have deliberately expended more money and more efforts (organiza-

tion-wise) in trying to improve public relations! And, here again, no amount of radio broadcasts, newspaper articles or other conventional public relations builder-uppers will ever supersede a certain amount of proper salesmanship, by each practicing physician, with his own patients. Our county society could appropriate thousands of dollars for propaganda purposes and of course some blanket good-will (in a nebulous, impersonal way) would be established. But of more transcendent importance, would be the utopic concept wherein every member would deliberately attempt to be a better ambassador between organized medicine and the public.

"This above stated philosophy may seem old fashioned in face of such colossal and breath-taking achievement as atomic energy. However, we feel absolutely certain that if every practicing physician in the United States would find it possible to merely remember the Golden Rule in dealing with his patients, and, if each of us would shake off the inertia and lethargy—which are our current worst enemies—many, if not all, of the present problems which surround our profession would be dissolved.

"Yes, science is wonderful. But, in the theater of medical public relations, not even the atomic bomb technic will ever replace adequately the foot soldier, as represented by the private practitioner in his own office.

"If we will but realize our own obligations and will strive to satisfy them, we will not need so many crutches or supports to do our work for us in the public relations field. Thereby, we may escape the delusion and the snare so frequently accepted by we moderns."

NEWS NOTES

The Missouri Association for Psychiatry and Neurology will hold its annual spring meeting on Sunday, March 14, at the Jefferson Hotel in St. Louis, Missouri, at 1 p. m. Among the speakers will be Frank H. Luton, M.D., Associate Professor of Psychiatry, Vanderbilt University School of Medicine, Nashville, Tennessee; Guy F. Witt, M.D., head of the Timberlawn Sanitarium, Dallas, Texas; and Walter D. Abbott, M.D., neurosurgeon, Des Moines, Iowa. All interested physicians are urged to attend. There will be a subscription dinner at the Jefferson following the scientific meeting.

Frank J. Koenig, M.D., Kansas City, was elected president of the Missouri Association of Mental Hygiene at its annual meeting in Kansas City, November 17. G. W. Robinson, Jr., M.D., Kansas City, was elected vice president.

Ralf Hanks, M.D., Nevada, superintendent of State Hospital No. 3 at Nevada since 1941, has resigned because of illness. Paul L. Barone, M.D., Nevada, will serve as acting superintendent.

J. H. Keim, M.D., Cape Girardeau, was a guest speaker recently at a meeting of the Nancy Hunter Chapter, D. A. R., in Cape Girardeau. He spoke on "Medical Advancement in America."

Jesse E. Douglass, M.D., Webb City, spoke before the Downtown Lions Club in Joplin recently on recent developments in the surgical treatment of chest diseases.

Alphonse McMahon, M.D., St. Louis, was elected president of the Mississippi Valley Medical Society at a meeting of the board of directors on November 16. Clinton W. Lane, M.D., St. Louis, was elected second vice president.

W. Byron Black, M.D., Kansas City, has been presented with a diamond key by the board of trustees of the Hansell Foundation in recognition of service as the first president of the foundation.

Charles H. White, M.D., Kansas City, has been awarded a certificate by the American Board of Anesthesiology.

Wallis Smith, M.D., Springfield, and Everett D. Sugarbaker, M.D., Jefferson City, were speakers at a meeting of the Missouri State Nurses' Association, the Missouri State League of Nursing Education and the University of Missouri Adult Education and Extension Service at Joplin on November 25. Dr. Smith spoke on "The Doctor, the Nurse and the Cancer Patient," and Dr. Sugarbaker talked on "Progress in Cancer Control."

E. Lee Dorsett, M.D., was elected chairman of the Section on Obstetrics of the Southern Medical Association at the Baltimore session of the Association.

Joseph B. Kirsner, M.D., will be the speaker at the meeting of the American Academy of General Practice of Greater St. Louis on January 27 at the auditorium of the St. Louis Medical Society.

J. A. del Regato, M.D., Columbia, spoke on "X-Ray Treatment of Cancer of the Lower Lip" at the meeting of the Radiological Society of North America which met in Boston on November 30.

Arthur W. Proetz, M.D., St. Louis, will appear on the program of the University of Florida Midwinter Seminar in Otolaryngology and Ophthalmology to be held in Miami Beach from January 12 to 17.

The Chicago Medical Society will hold its fourth annual clinical conference at the Palmer House, Chicago, March 2 to 5. An intensive four day post-

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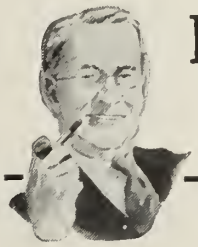
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Take our Better Business Bureau . . . or the Brewers' Program of "Self Regulation." The Brewers are anxious to keep undesirables out of the "field," so they keep a constant check on taverns selling beer. If they see any signs of "poison ivy," the offending tavern gets cleaned up . . . or reported to law enforcement agencies.

Naturally, the tavern keepers are anxious to co-operate. And as a result any "poison ivy" is a rare exception. Because, as I say, vigilance is a mighty effective control.

Joe Marsh

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graduate course for the general practitioner and specialist will be presented. The morning and afternoon lectures, the panel discussions, the clinicopathologic conference and the round table discussions each noon will cover newer methods of diagnosis and treatment. There will be scientific and technical exhibits.

Vern T. Bickel, M.D., Lamar, has been appointed city physician of Lamar to succeed J. A. Atkins, M.D., who resigned because of removal to Pittsburg, Kansas.

H. C. Gaebe, M.D., Desloge, was the speaker of The Lead Belt News program over Station KFMO on November 14. He spoke on "Poliomyelitis."

Robert Mueller, M.D., St. Louis, spoke before the Southside Lions Club of St. Louis on December 4 on "The Falsity of the Selective Service Figures."

DEATHS

Ambrose, Elmer C., M.D., Trenton, a graduate of the National University of Arts and Sciences, 1918; Fellow of the American Medical Association; member and former president of the Grundy-Daviess County Medical Society; aged 55; died October 15.

Furlong, Robert D., M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1933; member of the St. Louis County Medical Society; aged 36; died October 24.

Stufflebam, M. D., Humansville, a graduate of St. Louis College of Physicians and Surgeons, 1898; member and former president of the Dallas-Hickory-Polk County Medical Society; aged 75; died October 26.

Cambre, Adrian L., M.D., Macon, a graduate of the Keokuk Medical College, 1907; Fellow of the American Medical Association; member of the Macon County Medical Society; aged 67; died November 3.

Horn, Albert H., M.D., Steelville, a graduate of Barnes Medical College, 1903; Fellow of the American Medical Association; member of the Phelps-Crawford-Dent-Pulaski County Medical Society; aged 74; died November 10.

Kitchen, William B., M.D., Glasgow, a graduate of St. Louis University School of Medicine, 1907; Fellow of the American Medical Association; member and former president of the Howard County Medical Society; aged 66; died November 10.

Ferster, William R., M.D., Kansas City, a graduate of the University Medical College of Kansas City, 1908; honor member of the Jackson County Medical Society; aged 74; died November 11.

Schwab, Sidney I., M.D., St. Louis, a graduate of Harvard Medical School, 1896; Fellow of the American Medical Association; honor member of St. Louis Medical Society; aged 76; died November 12.

Burke, Fabian J., M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1929; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 43; died November 15.

Gallagher, Edward T., M.D., Kirkwood, a graduate of Lincoln Memorial Medical School, 1916; member of the St. Louis County Medical Society; retired; aged 70; died November 17.

ORGANIZATION ACTIVITIES

MISSOURI STATE MEDICAL ASSOCIATION
NINETIETH ANNUAL SESSION
March 14 to 17, 1948
St. Louis
SCIENTIFIC PROGRAM OF GENERAL MEETINGS

Monday, March 15, 1948, 9:30 a. m.—Gold Room, Jefferson Hotel

9:30 a. m. Obstetrics (specific title to be furnished), William F. Mengert, M.D., Dallas, Texas.
10:00 a. m. Avoidable and Unavoidable Hemorrhage in Obstetrics, Hugh G. Hamilton, M.D., Kansas City.
10:20 a. m. Discussion:
Howard B. Goodrich, M.D., Hannibal.
Joseph L. Johnston, M.D., Springfield.
10:30 a. m. View of Exhibits.
11:00 a. m. Induction of Labor, Ora James Gibson, M.D., Cape Girardeau.
11:20 a. m. Discussion:
John M. Singleton, M.D., Kansas City.
Leo J. Hartnett, M.D., St. Louis.
11:30 a. m. The Rh Factor, Matthew W. Weis, M.D., St. Louis.
11:50 a. m. Discussion:
Peter G. Danis, M.D., St. Louis.
Hollis Allen, M.D., St. Louis.

Monday, March 15, 1948, 1:30 p. m.—Gold Room, Jefferson Hotel

1:30 p. m. Common Fractures, E. C. Funsch, M.D., St. Louis.
1:50 p. m. Discussion.
1:55 p. m. The Diagnosis of Tuberculosis in Rural Areas, Lewis S. Jordan, M.D., Granite Falls, Minn.
2:25 p. m. Discussion.
2:30 p. m. Coronary Heart Disease, A. M. Estes, M.D., Jackson, Mo.
2:50 p. m. Discussion.



PICTURE OF how B. J. Bender became a nutritive failure....

Bender is but one of the great American army of chair-warmers, shining examples of the need for two-pants suits. Exercise? They lie down until the thought of it passes. Appetite? They seek the bizarre in food to goad their tired taste buds. Result? In too many cases, sub-clinical vitamin deficiency—a condition in which the sedentary worker has a host of companions in nutritional crime: the food faddists, chronic dieters, excessive smokers, alcoholics and many others. Dietary reform is the physician's first thought, of course—vitamin supplementation usually the second. And the vitamin preparation specified very often carries the "ABBOTT" name. There is a wide variety of vitamin preparations available in the complete Abbott line . . . for oral and parenteral use . . . for almost any patient's needs, age or taste. If you are not already familiar with Abbott's dependable vitamin products, they are worth your investigation—and trial. ABBOTT LABORATORIES, NORTH CHICAGO, ILLINOIS

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Dr. Louis A. M. Krause
(Internal Medicine)
Baltimore, Md.

Dr. L. R. Dragstedt
(Surgery)
Chicago, Ill.

Dr. John A. Toomey
(Pediatrics)
Cleveland, Ohio

Dr. Frank H. Lahey
(Surgery)
Boston, Mass.

Dr. Ralph Bowen
(Allergy)
Houston, Texas

Dr. Arthur J. Bedell
(Ophthalmology)
Albany, N. Y.

Dr. Wm. D. Stroud
(Cardiology)
Philadelphia, Pa.

Dr. Samuel F. Haines
(Internal Medicine)
Rochester, Minn.

Dr. Guy A. Caldwell
(Orthopedics)
New Orleans, La.

Dr. Robt. W. Keeton
(Internal Medicine)
Chicago, Ill.

Dr. A. J. Quick
(Bio-Chemistry)
Milwaukee, Wis.

Dr. Elmer Hess
(Urology)
Erie, Pa.

Dr. Alton Ochsner
(Surgery)
New Orleans, La.

Dr. Tate Miller
(Medicine)
Dallas, Texas

Capt. George N. Raines
(Neuro-Psychiatry)
Bethesda, Ma.

Dr. V. S. Counseller
(Gynecology)
Rochester, Minn.

Dr. Nicholson J. Eastman
(Obstetrics)
Baltimore, Md.

Dr. M. C. Winternitz
(Pathology)
New Haven, Conn.

Dr. Paul H. Holinger
(Oto-Laryngology)
Chicago, Ill.

Dr. M. E. Davis
(Obstetrics)
Chicago, Ill.

Dr. Fred W. Rankin
(Surgery)
Lexington, Ky.

Dr. Chas. A. Behney
(Gynecology)
Philadelphia, Pa.

Dr. Henry L. Williams
(Oto-Laryngology)
Rochester, Minn.

Programs will be mailed January 10th. If you don't get yours write for one.

A. F. Cooper, M.D.
Secretary-Treasurer
1479 Carr Avenue
Memphis, Tenn.

2:55 p. m. Headache, Bayard T. Horton, M.D., Rochester, Minn.
3:25 p. m. Discussion.
3:30 p. m. Allergy Problems, Herbert J. Rinkel, M.D., Kansas City.
3:55 p. m. Discussion.
4:00 p. m. View of Exhibits.
4:30 p. m. House of Delegates.

BANQUET IN HONOR OF PAST PRESIDENTS

Monday, March 15, 1948, 7:00 p. m.—Gold Room, Jefferson Hotel

Tendered by Officers of the Association, Presidents and Secretaries of County Medical Societies, Members of the House of Delegates, Members of the Association and Their Guests to Past Presidents of the Association.

Medicine's New Frontiers, Edward L. Bortz, M.D., Philadelphia, President, American Medical Association.

Tuesday, March 16, 1948, 9:00 a. m.—Gold Room, Jefferson Hotel

9:00 a. m. Office Gynecology, Joseph A. Hardy, M.D., St. Louis.
9:20 a. m. Discussion.
9:25 a. m. Common Proctologic Conditions, Thomas E. Smith, M.D., Dallas, Texas.
9:55 a. m. Discussion.
10:00 a. m. Hypertension, H. O. Loyd, M.D., Jefferson City, Mo.
10:20 a. m. Discussion.
10:25 a. m. View of Exhibits.
10:55 a. m. Sprains and Strains: Differential Diagnosis, F. G. Pipkin, M.D., Kansas City.
11:15. a. m. Discussion.
11:20 a. m. Treatment of Diabetes, Henry T. Ricketts, M.D., Chicago.
11:50 a. m. Discussion.

Tuesday, March 16, 1948, 2:00 p. m.—Gold Room, Jefferson Hotel

Symposium on Pediatrics

2:00 p. m. Garrett Hogg, M.D., Cabool, Moderator.
Panel:
H. E. Petersen, M.D., St. Joseph.
Caldwell K. Hamilton, M.D., St. Louis.
C. T. Herbert, M.D., Cape Girardeau.
3:15 p. m. View of Exhibits.
3:45 p. m. William J. Shaw, M.D., Fayette, Moderator.
Panel:
George V. Herrman, M.D., Kansas City.
Joseph C. Jaudon, M.D., St. Louis.
D. B. Landau, M.D., Hannibal.
5:00 p. m. Adjournment.

Wednesday, March 17, 1948, 9:30 a. m.—Gold Room, Jefferson Hotel

The Acute Abdomen

9:30 a. m. Signs and Symptoms of the Acute Abdomen, Charles G. Johnston, M.D., Detroit.
10:00 a. m. Medical Aspects, Alphonse McMahon, M.D., St. Louis.
10:20 a. m. View of Exhibits.
10:50 a. m. Surgical Aspects, Frank W. Hall, M.D., Cape Girardeau.
11:10 a. m. Obstetric and Gynecologic Aspects, Kenneth E. Cox, M.D., Kansas City.
11:30 a. m. Supportive Procedures, Charles H. Johnston, M.D., Detroit.
11:45 a. m. Discussion.

THE COUNCIL

The Council met at the Robidoux Hotel, St. Joseph, on November 22 and 23, with the following present: H. E. Petersen, M.D., St. Joseph; W. F. Francka, M.D., Hannibal; J. W. Thompson, M.D., St. Louis; Otto W. Koch, M.D., Clayton; J. F. Jolley, M.D., Mexico; R. W. Kennedy, M.D., Marshall; C. Edgar Virden, M.D., Kansas City; Wallis Smith, M.D., Springfield; E. C. Bohrer, M.D., West Plains; Frank W. Hall, M.D., Cape Girardeau; Morris B. Simpson, M.D., Kansas City; Robert Mueller, M.D., St. Louis; W. A. Bloom, M.D., Fayette; Mr. W. H. Bartleson, Kansas City; Mr. E. Hirsch, St. Joseph; Mr. Raymond McIntyre, St. Louis; Mr. T. R. O'Brien, St. Louis.

Dr. Virden asked that the minutes of the meeting of the Council on September 28 be corrected so that the motion regarding the report of the Coordinating Committee for medical and hospital service plans read: That the report of the committee be approved and the information in the report be transmitted to the four boards of trustees. The correction was accepted.

For several years the Missouri State Medical Association has been exempt from paying income ax, old age assistance tax and unemployment compensation by official ruling of the Treasury Department, dated August 14, 1935. On October 20, 1947, and November 10, 1947, the Association has been advised officially that the status has been changed because of recent Supreme Court decisions. The status as outlined in these recent letters is continued exemption on federal income taxes; however, effective January 1, 1947, the Association is subject to workmen's compensation and effective October 1, 1947, to old age assistance. The Association has been given the option of voluntarily

furnishing information from 1943 and paying no tax or the Administration would make an estimation and collect the back tax. Mr. O'Brien said that he had contacted the American Medical Association and that they had been placed in the same category. After discussion and upon motion of Dr. Smith, seconded by Dr. Petersen, Mr. O'Brien was instructed to furnish the material outlined within the prescribed ninety days.

The following report submitted by Dr. Hyndman, together with a financial statement and suggested budget were presented:

"The affairs in the office of the Missouri State Medical Association are running smoothly and in accord with our budget.

"The office is in order and besides the regular duties, they are making great progress with the public relations work. With additional help at intervals, a smooth running system has been started with a definite financial saving to the Association.

"A tentative budget has been arranged for next year which necessarily will be slightly increased. Detail report and suggested budget will be presented herewith."

Upon motion of Dr. Kennedy, the Treasurer's Report was accepted.

The following Committee on Budget was appointed: Drs. Bohrer, chairman; Francka, Petersen, Bloom.

Dr. Francka reported for the Committee on Award as follows: The Committee on Award has not had a formal meeting. However, the Executive Secretary has been asked to secure information from several states which provide such an award and we expect to have a complete report at the next Council meeting.

Mr. O'Brien reported a round table discussion on legislation in which he had taken part during the Secretary-Editors Conference in Chicago.

H. B. 126 of the Children's Code bills was discussed and it was decided that this was an educational problem, not a medical one, and that the Association should take no action on it.

The following resolution was presented by Dr. Thompson:

Whereas, Anesthesiology has been recognized as a specialty for the last ten years by the American Board of the American Medical Association, and

Whereas, It has existed as a specialty for the last thirty years, and

Whereas, Other recognized specialties have a standing committee in the Missouri State Medical Association, and

Whereas, The St. Louis Society of Anesthesiologists desires to maintain and improve the specialty nationally and locally, therefore be it

Resolved, That the Missouri State Medical Association be requested to appoint a standing committee on Anesthesiology, said committee to be composed of five members of the Missouri State Medical Association and the American Society of Anesthesiologists.

The resolution was signed by Drs. Joseph McNearney, St. Louis; O. T. Blanke, Joplin; J. J. Merz, St. Louis; Peter DeMaria, Kansas City; Charles White, Kansas City.

After discussion, Dr. Virden moved that a special committee be appointed and that the resolution be referred to the Committee on Constitution and By-Laws since establishment of a standing committee would necessitate a change in the by-laws. The motion was passed.

Mr. McIntyre reported on activities of county medical societies and Councilor Districts since the last Council meeting as well as the Rural Health Conference, health councils and the placing of physicians in out-state Missouri. Upon motion of Dr. Petersen, the report was approved.

Dr. Mueller gave the following report of the Committee on Public Policy and Public Relations: The Committee on Public Policy and Public Relations met at the Coronado Hotel, St. Louis, on November 16 with the following present: Drs. Robert Mueller, chairman; Arie C. van Ravenswaay, Boonville; Llewellyn Sale, St. Louis; Frank Hall, Cape Girardeau; Mr. T. R. O'Brien, Mr. Raymond McIntyre, Miss Helen Penn, St. Louis; Mr. W. H. Bartleson, Kansas City. Mr. Robert Willier, St. Louis, public relations consultant, presented a program and proposal for public relations work to the committee. After discussion by all present the following recommendation was adopted for presentation to the Council: That any expansion of public relations work should be by personnel employed in the Association office and that, if advisable, arrangements be made for consultant advice upon the occasions when needed.

After discussion by Drs. Smith, Francka, Mueller, Virden and Mr. O'Brien, upon motion by Dr. Virden the report was accepted with the request that further study be given.

The Council went into executive session.

Meeting of November 23

Dr. Thompson presented the following report of the Committee on Emergency Expenditures which on motion was approved: The Committee approved raises for personnel in the office as recommended by Mr. O'Brien, effective October 1. The Committee also approved travel allowance of 7 cents per mile when automobiles are used by the Field Secretary and the Executive Secretary, effective October 1.

Dr. Thompson presented the problem which exists in St. Louis of the restriction of any private practitioner from being allowed to collect fees on accident cases hospitalized in St. Louis City Hospital. It was pointed out that in many instances insurance is involved and the hospital and all services are paid for except the medical service. Dr. Virden pointed out that in Kansas City General Hospital, money that would be paid to a physician who is on the staff went into a fund but that if a patient could not be moved from the hospital and was an emergency case, a private physician could treat the patient, at the patient's request, and bill the patient for his services. It was decided that further information from other cities would be obtained and the problem would be studied further.

The question of the assessment being made a part of the permanent dues and raising the dues was discussed. The following committee was appointed to study this and report at the next meeting of the Council: Drs. Francka, chairman, Jolley, Smith, Virden and Thompson. In this connection the use of a brochure on the Association was discussed but no conclusion drawn.

Dr. Smith asked the approval of the Council for the hyphenation of the Barry, Lawrence, Stone, Christian and Taney counties to be known as the Ozarks County Medical Society. Approval was voted.

S. B. 223 which provides that any county which desires more than one county tax supported hospital can have such upon vote of the people of the county, was discussed. Upon motion, the Council went on record as opposing this bill.

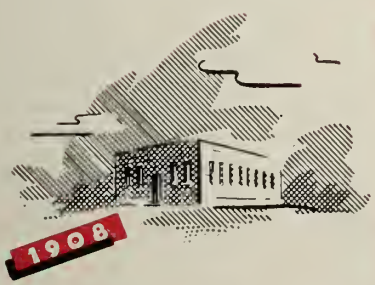
A vote of thanks was given Dr. Petersen for his arrangements and hospitality during the Council session.

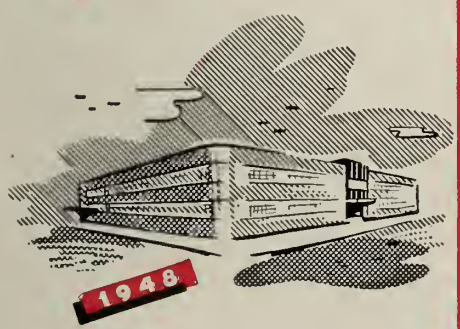
Dr. Virden invited the Council to meet in Kansas City at any time that it seemed feasible.

The following budget was adopted:

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Salaries	$23,700.00
Printing Journal	15,000.00
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Telephone and Telegraph	1,000.00
Office Rent and Light	2,500.00
Meetings and Committees Expense	10,500.00
Defense	500.00
Postgraduate Course	1,000.00
Woman's Auxiliary	500.00
Public Relations	4,500.00
Insurance Annuity	950.00
Miscellaneous General Expense	2,400.00
Furniture and Fixtures	500.00
Total	$68,850.00

J. W. Thompson, M.D., Chairman.

MUSINGS OF THE FIELD SECRETARY

Following the close of the scientific program of the Eighth Councilor District meeting at the State Sanatorium, Mount Vernon, a doctor in the audience was overheard to remark "By golly, I know now what's the matter with that patient I have been so concerned about recently." Good evidence that one can never tell when one may pick up something of value at a medical meeting.

At a joint twelve counties medical meeting at Clinton, the presiding physician was hard pressed in terminating a free for all pro and con discussion on some of the provisions of the Federal Hospital Construction Act. The provision eliminating hospitals, not in the nonprofit category, from receiving federal funds for new construction or additions received a good airing.

One of the physicians attending a nine counties meeting at Chillicothe made a strong plea that at least one of the meetings of the group during the year be devoted to a discussion of medical economic subjects. Along this line, would it be well to go a bit further and have some phase of medical economics discussed at every medical society meeting? Maybe some one would come forth with the ideal method of collecting old accounts or the right charge for delivering triplets.

At this same meeting the suggestion was offered that a questionnaire be sent to all physicians in the nine counties requesting information on fees charged for various medical services in the area. The information on the returned unsigned questionnaires would be tabulated and brought up for general discussion at a subsequent meeting of the group. Maybe definite benefit to both the medical profession and the public might come from a project of this kind.

A physician expressed an opinion at the Second Councilor District meeting at Moberly that possibly it would be good for some one to disagree now and then with the scientific speakers on medical society programs. He figured that such a procedure might promote some lively and productive discussions.

MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for January and February, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

January 2: Gynecology and Genitourinary.
January 7: Miscellaneous.
January 9: Breast.
January 14: Skin.
January 16: Cervix.
January 21: Gastrointestinal.
January 23: Head and Neck.
January 28: Skin.
January 30: Miscellaneous.
February 4: Miscellaneous.
February 6: Gynecology and Genitourinary.
February 11: Skin.
February 13: Breast.
February 18: Gastrointestinal.
February 20: Cervix.
February 25: Skin.
February 27: Head and Neck.

REPORT ON THE INCIDENCE OF HOMOLOGOUS SERUM JAUNDICE FOLLOWING THE USE OF SURPLUS DRIED PLASMA

The Committee on Blood and Blood Derivatives of the Advisory Board on Health Services of the American National Red Cross believes that the possibility of disease transmission by the injection of human blood and certain of its derivatives should be reemphasized to state and territorial departments of health and through them to practicing physicians within their jurisdiction. Although many diseases theoretically might be so transmitted, homologous serum hepatitis or jaundice following the administration of pooled plasma has proved to be the greatest practical problem; first, because of the difficulty or impossibility of detecting infective donors; second, because of the practice of pooling ten to fifty bloods to reduce the isohemagglutinin titer, and third, because of the availability of dried plasma as a result of the distribution of surplus blood derivatives by the American Red Cross.

In the instructions for the use of normal human dried blood plasma, prepared under the direction of this committee and sent out to departments of health at the time of the initial distribution of the surplus plasma received by the American Red Cross from the Army and the Navy, attention was called to the possibility of virus transmission under the section headed Adverse Reactions from the Administration of Human Plasma. It was emphasized that jaundice might develop from one to four months after administration if a particular lot was contaminated with the virus of homologous serum jaundice.

The committee has reconsidered the advisability of distributing this plasma on several occasions but has always felt that, in view of the lack of availability of whole blood or other relatively safe blood derivatives in many parts of the country, plasma would save many more lives than would be lost from the occasional severe case of hepatitis which might result from its use. At the same time, steps were taken to determine as accurately as possible the real risk to the patient from the use of

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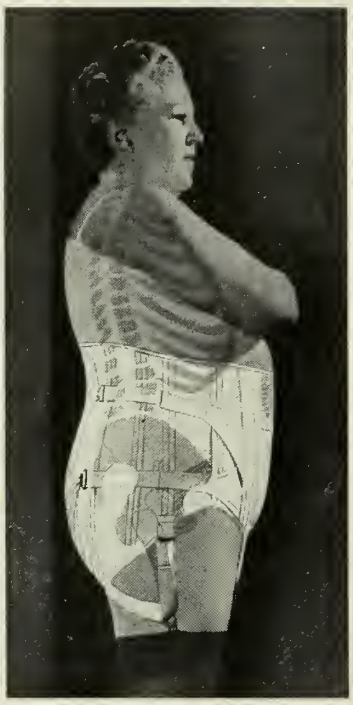
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Research discloses that the increased weight of the abdomen, carrying the center of gravity forward, puts strain on muscles of back and feet; that ultimately round shoulders and increased cervical and lumbar curves develop; that the diaphragm and abdominal viscera lie on a lower plane than normally; that eventually respiratory and circulatory symptoms appear.

S. H. Camp & Company, recognizing this proportionate irregularity and the frequency of its occurrence, has made supports for many years for these obese persons and for those in whom the obesity is largely confined to the abdomen.

Camp surgical fitters are taught to fit patients with pendulous abdomen in the reclining position; thus the intestines are redistributed to the sides and back of the abdomen and the support will hold them there.

The Camp Support illustrated is especially efficient in holding the viscera in their redistributed position by reason of the support given to the pelvis.

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the surplus plasma being distributed by the American Red Cross. Studies were initiated in several states. One of these carried out by the New York State Department of Health has now progressed to the point where sufficient figures are available for tentative conclusions. In 649 patients followed for six months after transfusions of this plasma, 29 cases of hepatitis have been observed, while there have been no suggestive symptoms of hepatitis in 1,597 household contacts of these 649 patients, thus suggesting that the disease actually was homologous serum jaundice and not epidemic infectious hepatitis. This figure of 4.5 per cent thus represents the probable incidence of the disease in recipients of random lots. It is lower than the 7.3 per cent incidence reported in approximately 1,100 patients receiving pooled serum prepared by the Northwest London Blood Supply Depot in Great Britain, but the size of their pool was somewhat larger.

There is every reason to believe that whole blood, fresh or frozen plasma prepared by hospital blood banks, or commercial plasma, as well as convalescent serum, may all transmit the same agent, but the factor of pooling greatly increased the probability factor with plasma. On the other hand, there is good evidence that the two most widely used products of plasma fractionation are relatively free from this risk. In the case of immune serum globulin (normal human serum gamma globulin) distributed by the American Red Cross for the prophylaxis of measles, follow-up studies have been made on approximately 1,900 patients. Only one case of jaundice occurred within six months of injection, and in that case 74 other children received the same lot without exhibiting any evidence of hepatitis. In the case of normal human serum albumin (salt poor) a heat treatment used in its routine preparation has been shown to inactivate a strain of homologous serum hepatitis virus. Various promising studies on methods for inactivation of this virus in plasma are under way, but nothing has been perfected thus far. Finally there is evidence that the disease may be transmitted from patient to patient in hospitals by the use of improperly sterilized or unsterilized syringes and needles.

This committee still does not feel that plasma should be withdrawn from distribution. However, it does believe that all practicing physicians should be reminded of the potential risk to the patient in the administration of pooled plasma and urged to restrict its use to those instances, chiefly serious emergencies, when its use is clearly indicated and when safer agents such as whole blood or serum albumin are not available. Moreover, physicians who see patients with hepatitis should make a habit of inquiring about their injections with blood to its derivatives during the preceding six months and of reporting such cases to the state or territorial department of health.

Patients who have been hospitalized within six months and particularly those who have received injections of human blood, plasma or serum during that period should not serve as blood donors even though they may feel perfectly well. Furthermore, potential blood donors should be rejected if a history of jaundice among members of their household within a period of the last six months is obtained.

This report was distributed by the American National Red Cross, August 15, 1947, and published in *The Journal of the American Medical Association*, November 15.

Prepared by the Committee on Blood and Blood Derivatives of the Advisory Board on Health Services of the American National Red Cross.

PHARMACEUTICAL AWARD MADE TO A. M. A. IN DECEMBER

The American Pharmaceutical Manufacturers' Association, New York, made its 1947 scientific award to the American Medical Association in recognition of its fundamental contributions to public health in the field of medical research.

The award, which was made on nomination by a committee of 16 eminent scientists, was presented at a ceremony in the Waldorf-Astoria Hotel in New York on Tuesday, December 16.

This scientific award was made to the Mayo Foundation for Medical Education and Research in 1946; to the Rockefeller Institute for Medical Research in 1945; to the National Research Council in 1944 and to Sir Alexander Fleming and Sir Howard W. Florey of London in 1943 for their penicillin discoveries.

"The New York ceremony on December 16 was one of unusual character and large research significance," says Charles Wesley Dunn, New York, general counsel for the American Pharmaceutical Manufacturers' Association. "We believe it to be one of the most important scientific events in the pharmaceutical year. It consisted of morning, afternoon and evening sessions and a program of basic research value."

The American Medical Association, which celebrated its centennial year in Atlantic City last June, has continuously encouraged medical research. Early in its career the association began offering prizes for essays and other contributions to the advancement of medical knowledge.

Austin Smith, M.D., Chicago, director of the A. M. A.'s Council on Pharmacy and Chemistry, said that when the council was formed in 1905, the need of special studies in establishing the worth and the nature of various remedies led to the creation of additional funds to be set aside for research in the field of therapy. Through the years, the American Medical Association has expended more than $1,000,000 for fundamental investigations in the furtherance of basic scientific research in medicine.

At an annual loss of from $40,000 to $50,000, the American Medical Association still maintains the Quarterly Cumulative Index Medicus, an indispensable tool for the advancement of scientific research. This publication indexes day by day, month by month, every important article published in the field of medicine. Since 1916 the American Medical Association has spent more than $1,000,000 on this venture alone.

The following served on the scientific advisory committee which nominated the American Medical Association for the 1947 pharmaceutical award:

Dr. David P. Barr, Professor of Medicine, Medical School, Cornell University, New York; Dr. Anton J. Carlson, Emeritus Professor Physiology, Medical School, University of Chicago; Dr. George R. Cowgill, Professor of Nutrition, Yale University, New Haven, Conn.; Dr. Windsor C. Cutting, Professor of Therapeutics, Medical School, Stanford University, San Francisco; Dr. Carl A. Dragstedt, Professor of Pharmacology, Medical School, Northwestern University, Chicago; Dr. Rolla E. Dyer, Director, National Institute of Health, Washington, D. C.; Dr. Everett I. Evans, Professor of Surgery, Medical College of Virginia, Richmond; Dr. Herbert S. Gasser, Director. The Rockefeller Institute for Medical Research, New York; Dr. H. Corwin Hinshaw, Professor of Medicine, Mayo Foundation, Rochester, Minn.; Dr. Charles A. Janeway, Professor of Pediatrics, Medical School, Harvard University, Boston; Dr. Chester S. Keefer, Professor of Medicine, Medical School, Boston University, Boston; Dr. Howard B. Lewis, Professor of Psysiological Chemistry and Director of College of Pharmacy, University of Michigan, Ann Arbor; Dr. Perrin H. Long, Professor of Preventive Medicine, Medical

School, Johns Hopkins University, Baltimore, Md.; Dr. Isaac Starr, Dean, Medical School, University of Pennsylvania, Philadelphia; Dr. H. B. Van Dyke, Professor of Pharmacology, College of Physicians and Surgeons, Columbia University, New York; Dr. John B. Youmans, Dean, Medical School, University of Illinois, Chicago.

DR. BAUER GIVEN PRENTISS NATIONAL AWARD IN HEALTH EDUCATION

W. W. Bauer, M.D., director of the Bureau of Health Education of the American Medical Association since 1932, has been awarded the Elisabeth Severance Prentiss National Award in Health Education, given each year by the Cleveland Health Museum to the person who has made the most outstanding contribution to health education.

The presentation was made November 17, 1947, at the annual civic luncheon in Cleveland of the Cleveland Health Museum. The ceremony was broadcast over the Mutual network. In addition to the acceptance speech by Dr. Bauer, Dr. Robert Stecher of Cleveland gave a report on medical conditions in the European countries from which he has just returned.

The Prentiss Award was established in 1943 in memory of the Museum's first foundation benefactor to stimulate health education, and recipients are selected by a national committee. Names of the annual winners are inscribed on a bronze plaque at the Museum, and the winners themselves receive a replica of the plaque and an embossed certificate. Mrs. Prentiss, in whose name the awards are given, left her mansion to house the first health museum in America.

Dr. Bauer, the winner of this year's award, is associate editor of *Hygeia*, the health magazine of the American Medical Association. He is in charge of the A. M. A. radio programs, broadcast over the NBC-MBS network and other stations, and is the author or co-author of nine books and of numerous magazine articles pertaining to health.

Before his connection with the American Medical Association, Dr. Bauer was active in the field of public health in Wisconsin. From 1922 to 1923 he was in charge of contagious diseases in the Milwaukee Health Department. In 1923 he established a health department for the city of Racine and served as the city's Health Commissioner until 1931, during which time Racine won first honors once and honorable mention twice in the Inter-Chamber Health Conservation Contest of the U. S. Chamber of Commerce.

While at Racine, Dr. Bauer and his wife established the first dramatized health broadcasts ever given over the air, with the cooperation of a local radio station, WRJN.

COUNTY SOCIETY HONOR ROLL 1948

(Societies Which Have Paid Dues for All Members and Date Placed on Honor Roll))

Miller County Medical Society, December 2, 1947.

Camden County Medical Society, December 6, 1947.

Ste. Genevieve County Medical Society, December 10, 1947.

Mercer County Medical Society, December 11, 1947.

Moniteau County Medical Society, December 15, 1947.

SOCIETY PROCEEDINGS

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

Eighty-six physicians attended a meeting of the Second Councilor District at Moberly the afternoon and evening of November 13.

The scientific program was presented in the afternoon comprising three practical discussions: "Diagnostic Problems of the Acute Abdomen," Peter Heinbecker, M.D., St. Louis; "Infant Feeding, Immunizations and General Care Through the First Year of Life," Daniel B. Landau, M.D., Hannibal; "The Rh Factor," R. O. Muether, M.D., St. Louis.

Following an enjoyable social hour and an excellent dinner, a round table discussion was held on "Your State Association in Action" with Morris B. Simpson, M.D., Kansas City, President, serving as moderator. Participants in the discussion included: R. M. James, M.D., and John Williams, Jr., M.D., of the Division of Health; T. R. O'Brien, Executive Secretary, and Ray McIntyre, Field Secretary, of the Missouri State Medical Association.

A charter from the Association was presented by W. F. Francka, M.D., Hannibal, Councilor of the District, to the newly hyphenated Chariton-Macon-Monroe-Randolph County Medical Society, which served as host to the meeting.

FOURTH COUNCILOR DISTRICT

OTTO W. KOCH, CLAYTON, COUNCILOR

St. Louis County Medical Society

The St. Louis County Medical Society met November 12 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

The following members were nominated for election on December 10: President, Paul R. Whitener, M.D., and Martyn Schattyn, M.D.; vice president, Irvin Berwald, M.D.; secretary, Robert Kingsland, M.D.; councilors for three year term, Richard A. Sutter, M.D., Louis F. Howe, M.D., Carl Irick, M.D., M. H. Scheele, M.D., John B. Canepa, M.D.; councilor for one year term, Edward C. Holscher, M.D., Guy Magness, M.D.; delegates, T. H. Hale, M.D., James R. Meador, M.D., N. S. Vitale, M.D., Clyde P. Dyer, M.D., Julius Jensen, M.D.; alternate delegates, Irvin Berwald, M.D., Roy A. Walther, M.D., C. E. Sanders, M.D., O. P. Hampton, Jr., M.D., John R. Daly, MD., Eugene R. Brown, M.D.

E. C. Holscher, M.D., St. Louis, presented a talk on "Recent Advances in the Management of Orthopedic Conditions." The paper was discussed by Drs. Richard Sutter, James R. Meador, Joseph Backlar and Richard Graeser.

Meeting of November 26

The Society met on November 26 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

Otto W. Koch, M.D., reported that the Annual Installation Banquet would be held at the Coronado Hotel on January 14.

Cecil A. Sharp, M.D., Health Commissioner of St. Louis County, spoke on "Recent Advances in Public Health." The talk was discussed by Drs. N. S. Vitale, Joseph Backlar, James Meador, Guy Magness, John O'Connell, Otto W. Koch, S. Tashma, Roland Steubner, Edwin C. Holscher and R. A. Sutter.

Martyn Schattyn, M.D., Secretary.



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NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central Counties Medical Society

The South Central Counties Medical Society held a dinner meeting at the El Patio Hotel, Cabool, on November 21, with the scientific meeting at the office of Garrett Hogg, Jr., M.D.

Members and visitors present were J. R. Mott, M.D., Hartville; L. T. VanNoy, M.D., Norwood; R. A. Ryan, M.D., H. G. Frame, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, Jr., M.D., Cabool; Rollin H. Smith, M.D., West Plains; Fred Farthing, M.D., and S. S. Peterson, M.D., Springfield.

"Peptic Ulcer" was discussed, Dr. Peterson speaking on the medical management and Dr. Farthing showing slides and discussing surgical conditions. A vote of thanks was given the speakers.

A. C. Ames, M.D., Secretary.

BOOK REVIEWS

Practical X-Ray Treatment by Arthur W. Erskine, M.D., Third Edition Revised and Enlarged, Bruce Publishing Company, Saint Paul and Minneapolis. 1947. Price $4.50.

This is a small concise book on roentgen therapy setting down the author's own method of procedure without attempting to reconcile the opinions of various other writers.

In this field of widely divergent methods it is meant to serve as a guide for the young therapist in evaluating his own methods of procedure.

That there is need for such a book is indicated by its extension to a third edition; that the subject matter offers a real problem which is not too easily met is indicated by the continuous revision and expansion of the work carried out by the author.

Although the book is small in size, all phases of the subject are considered; records, apparatus, standard technics of application of x-rays as well as diseases most acceptable and the methods of treatment.

The abundant information provided at the finger tip of the physician make this a valuable book for not only the young radiologist but the general practitioner as well. L. R. S.

Internal Medicine in General Practice. By Robert Pratt McCombs, B.S., M.D., F.A.C.P., Assistant Professor of Medicine and Director of Postgraduate Teaching, Tufts College Medical School; Senior Attending Physician, The Joseph H. Pratt Diagnostic Hospital; Diplomate of the American Board of Internal Medicine. Second Edition, Illustrated. Philadelphia and London. W. B. Saunders Company. 1947. Price $8.00.

This is a highly readable book on some of the commoner problems of internal medicine, with no unorthodox ideas of diagnosis or treatment. The book contains a great deal of well organized information from which one can obtain a good general conception of any of the subjects treated. It should be of particular interest to medical students and those specialists who have long been separated from the field of general medicine. Many may prefer the larger and more inclusive texts of Cecil, Meakins or Osler-McCrae-Christian for quick reference. However, Dr. McComb includes many specific suggestions in the management of disease which make it worthwhile to consult this book.

A possible criticism is that some of the recommended suggestions are, it appears, not within the author's personal experience, but are adopted from the literature. The scope of modern medicine perhaps makes this inevitable. One wonders, however, in how many cases of hypertension the author has personally evaluated the results of sympathectomy, or how many cases of intestinal parasitism he has recognized and treated by the methods outlined.

Dr. McComb writes interestingly and well. The book is recommended. B. B. P.

Office Treatment of the Eye by Elias Selinger, M.D., Attending Ophthalmologist, Mount Sinai, Cook County and Michael Reese Hospitals. Year Book Publishers, Inc., Chicago. 1947. Price $7.75.

In the preface to this book the author concludes that there is "a need for a manual describing ordinary office procedures and routine ophthalmologic treatments in details." Certainly the enormous amount of detail shows how well the author has accomplished his aims. The first chapter discusses the antibiotic as far as ocular structures are concerned, the nonspecific foreign protein therapy and specific protein therapy. A consideration of foreign body in the eye occupies the second chapter. There are excellent photographs of practical procedures in this chapter. Injuries to the eye and both their medical and surgical treatment is told in the third chapter. Refraction, muscles and squint are referred to in the next three chapters. The external adnexa such as lacrimal apparatus, orbit and lids follow in succession. A discussion of conjunctiva, cornea and sclera follows. The deeper tissues of the globe and glaucoma occupies the last chapters of the book. The subject of iontophoresis and the author's apparatus are described in the appendix. The format is good. The field of office ophthalmology is well covered. L. L. M.

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NEWS.—Readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to physicians.

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Two weeks Surgical Anatomy & Clinical Surgery starting February 16, March 15.
One week course Surgery of Colon & Rectum starting March 8, April 26.
Two weeks Surgical Pathology every two weeks.

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Four weeks course in Electrocardiography & Heart Disease starting February 16, May 3.

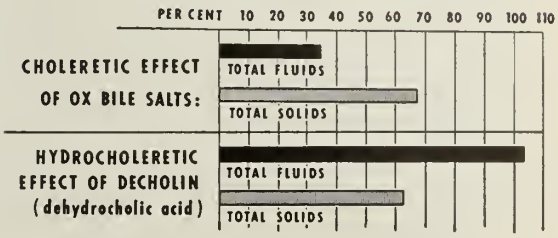
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Mayfair, 806 St. Charles	3.25- 7.00	5.00- 8.00	6.00- 8.00	11.00-up
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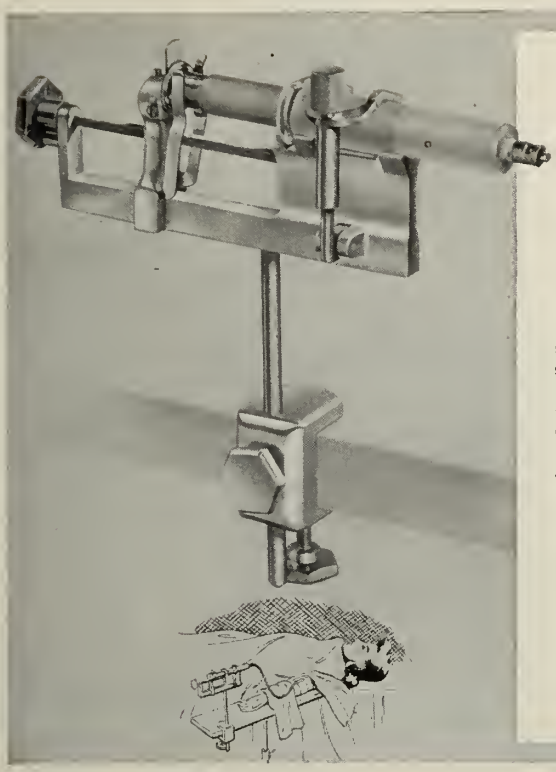
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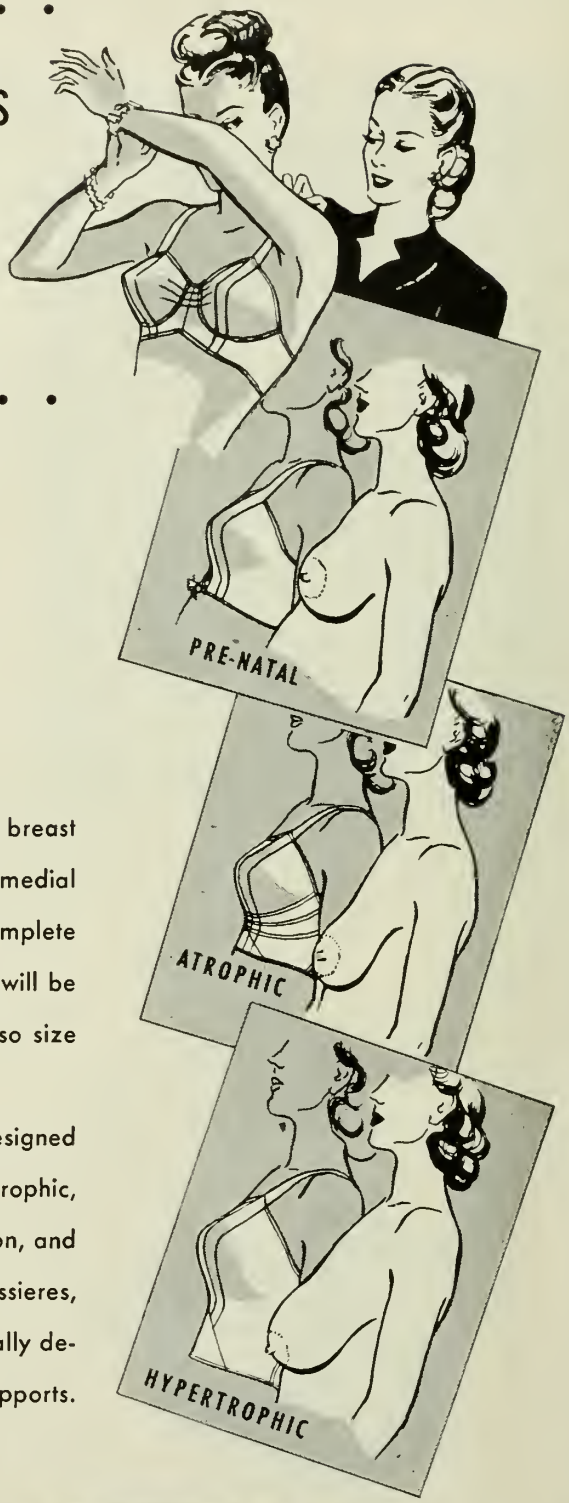
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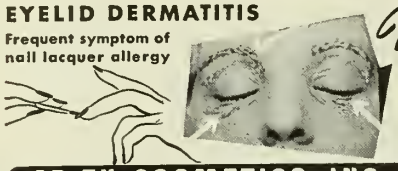
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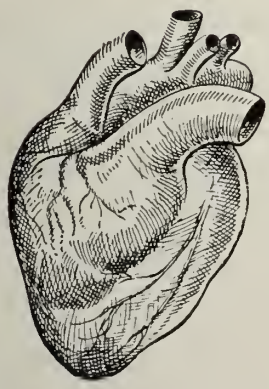
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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

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Industrial Dermatoses And the Economic Import
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EDITORIALS

Annual Session
American Medical Association
"You'll Be Sorry"
Paul R. Hawley, M.D., Etc.

(Contents Index Page 77)

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See page 117 for Hotel Reservation Blank

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°Spies, T. D., and Butt, H. R., in Duncan, G. G.: Diseases of Metabolism, W. B. Saunders Co., Phila., 1942, p. 453.

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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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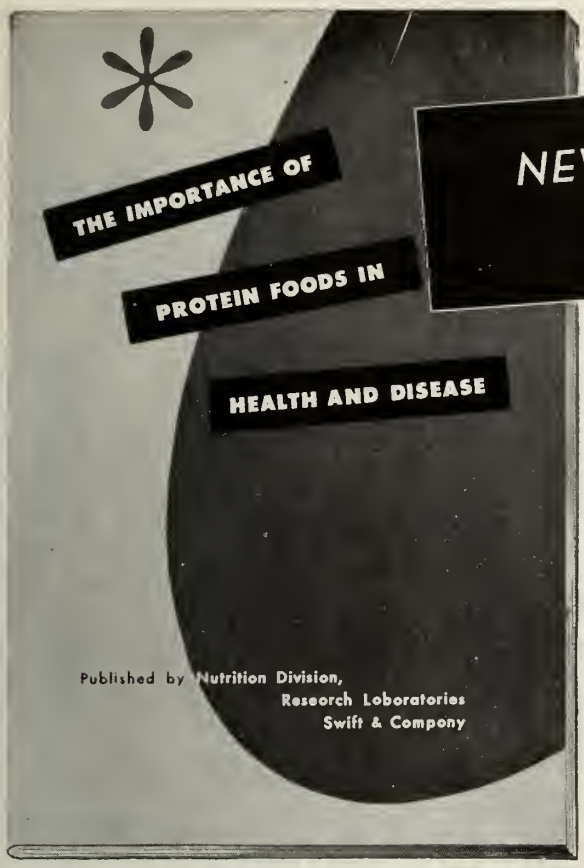
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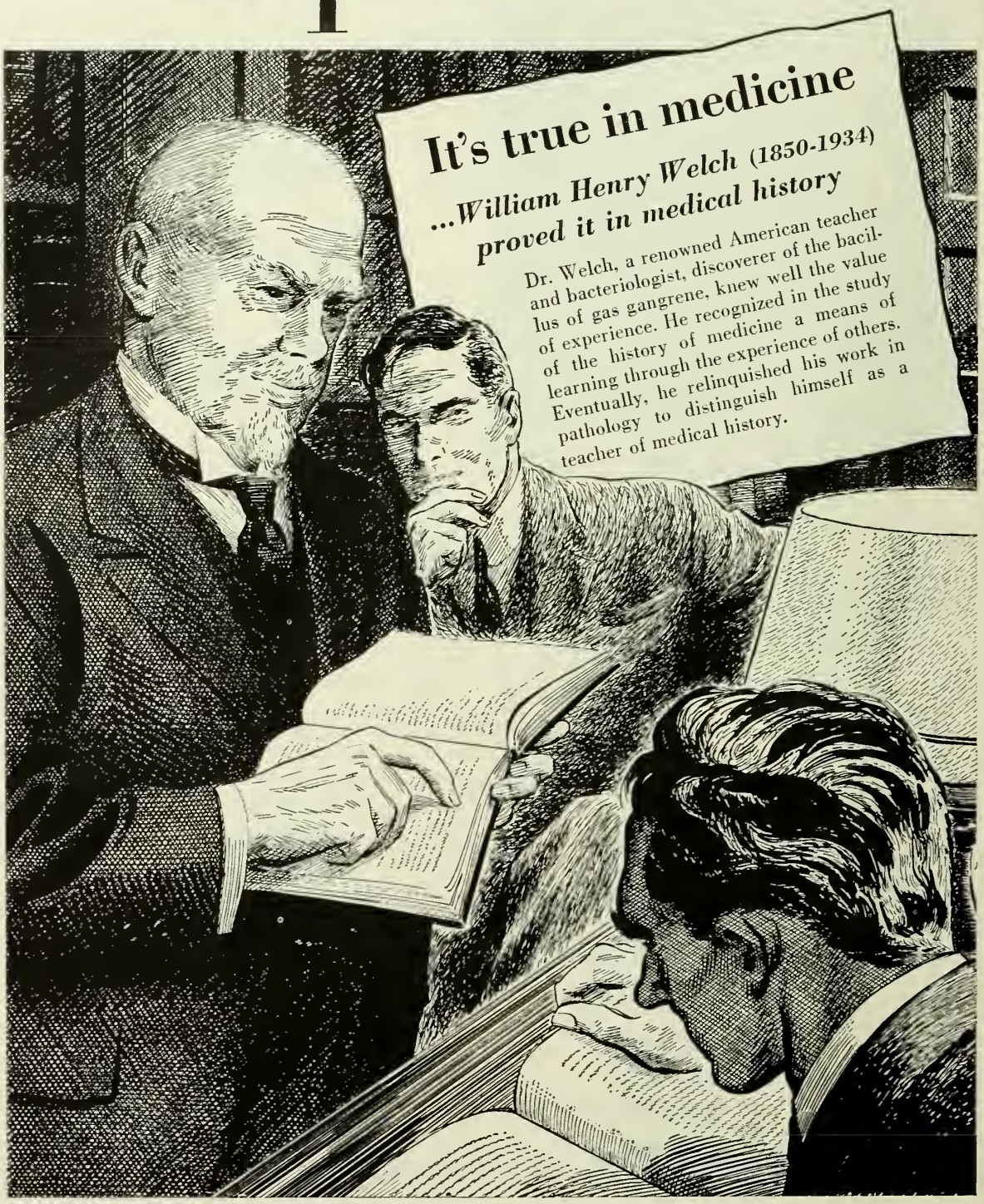
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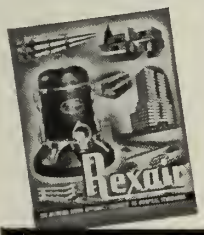
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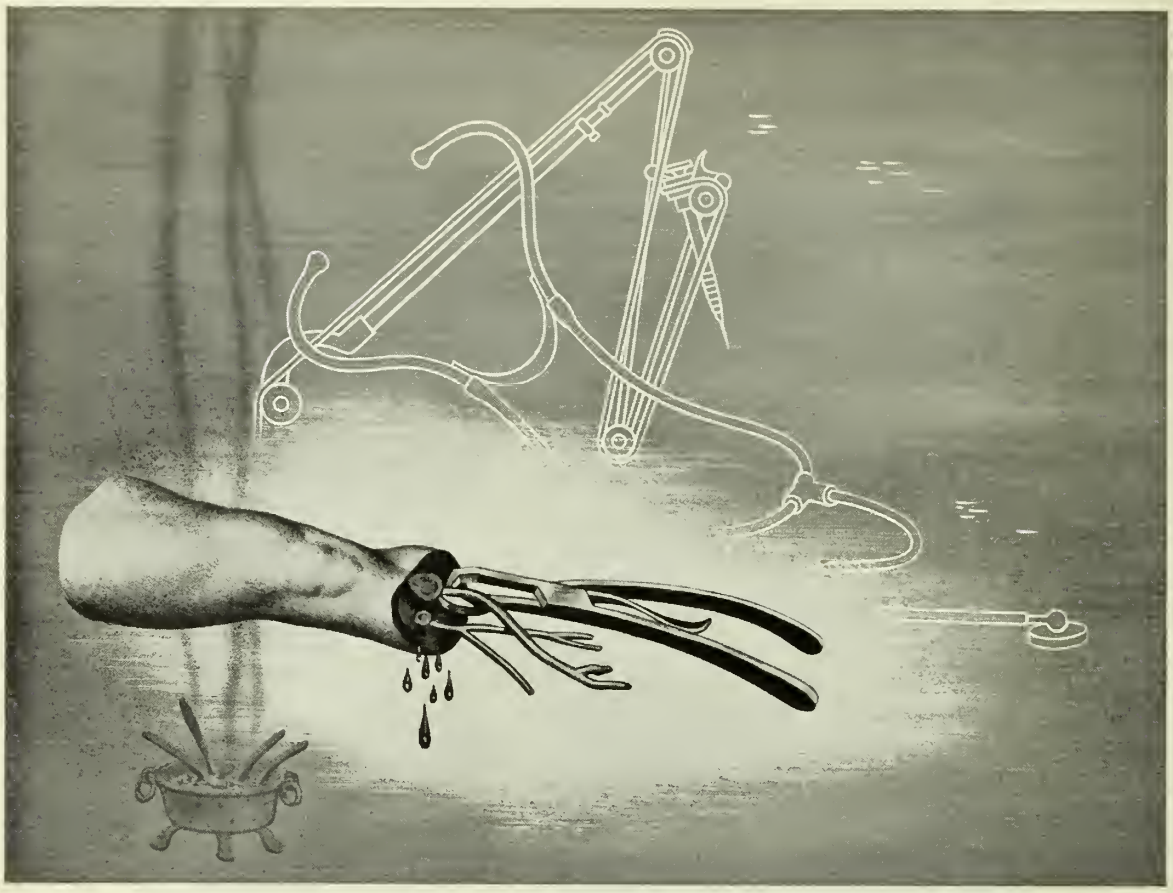
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THE JOURNAL

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Missouri State Medical Association

The Official Organ of the State Association and Affiliated County Societies
Issued Monthly under direction of the Publication Committee

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VOLUME 45 FEBRUARY, 1948 NUMBER 2

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Symposium on Industrial Health

THE MEDICAL PROFESSION'S RESPONSIBILITY IN THE IMPROVEMENT OF INDUSTRIAL HEALTH

RICHARD A. SUTTER, M.D., *St. Louis*

THE RESPONSIBILITY of the medical profession toward industrial health parallels its responsibility to public health. Its members have come to accept the fruits of proper application of the principles of public health but, in general, have not vigorously pursued the promotion of industrial hygiene, which may be defined as the promotion of optimum health among the working population in the environment of their employment. The profession must mobilize the full knowledge, forces, methods and practices at its disposal toward the improvement of the health of the industrial worker, for both labor and management are looking to it for such leadership.

Indicative of the awareness of labor of the importance and value of the practice and the application of the principles of industrial hygiene is the following quotation from an article written by a prominent labor leader, John I. Rollings, Executive Secretary, Central Trades and Labor Unions of St. Louis and Vicinity, published in the May 1947 issue of *Industrial Health Review*, the official organ of the Industrial Hygiene Section, St. Louis Health Department, entitled "Industrial Hygiene: Its Effect on Worker Morale and Productivity": "Healthful environment within an industrial plant is of vital importance in the maintenance of maximum productivity of a worker. Sources of mental and physical aggravation flowing from lack of heat in winter, excess heat in summer and improper ventilation, are environmental hazards that every progressive employer should be most interested in eliminating. These are minor in nature but very important when measured in terms of psychological and unhealthful effect on the worker. . . . Unions . . . through experience over the years . . . have discovered that the workers' health, safety and welfare is as important as is his rate per hour or month."

Interest of management is mounting too because it is recognizing rapidly that health and production go hand in hand. In a recent paper Victor Heiser, M.D., Medical Consultant to the National Association of Manufacturers, had this to say: "The National Association of Manufacturers has weighed the evidence pro and con on Industrial Health Service and stands convinced that health programs at the plant level are essential to all forward-looking, hard-hitting, industrial operations."

Government constantly is expanding its interest in industrial health problems. Its agencies at the nation level are the Division of Industrial Hygiene, U. S. Public Health Service, and the Bureau of Labor Standards, U. S. Department of Labor. Within the State of Missouri there is in the Division of Health an active, progressive Industrial Hygiene Service under the Environmental Sanitation Section. In the Department of Education the State Vocational Rehabilitation Service provides medical care, guidance and retraining for those who can be restored to gainful employment, regardless, however, of the origin of their casualty. Many county and city health departments have active sections on industrial hygiene.

The interest of insurance carriers in industrial health is becoming more manifest by their establishment of medical departments and foundations devoted to industrial hygiene and rehabilitation.

The increased interest of the medical profession and its recognition of its responsibilities is reflected in the establishment of the Council on Industrial

Health of the American Medical Association, the Committee on Industrial Health of the Missouri State Medical Association, and committees on industrial health in the county medical societies. The establishment of the publication *Occupational Medicine,* by the American Medical Association and the devotion of one issue per year of The Journal of the Missouri State Medical Association to industrial health further evidences the emphasis on this branch of medicine. Courses in industrial medicine are being offered today at the University of Pennsylvania, Wayne University in Detroit and at Yale University School of Medicine. Among the members of the Missouri State Medical Association there are numerous men who belong to associations devoted to the promotion of industrial health such as the American Association of Industrial Physicians and Surgeons, the Central States Society of Industrial Medicine and Surgery, the American Association of Railway Surgeons, the National Council on Rehabilitation, the American Association of Industrial Hygienists and the Association of Railway and Industrial Physicians and Surgeons of Kansas City.

In recognition of these varied interests in industrial health the Council on Industrial Health of the American Medical Association has advanced the theory endorsed by the House of Delegates at the San Francisco meeting that the planning of medical services in industry would best be accomplished by the combined, cooperative planning by medicine, management and labor.

Physicians can apply themselves effectively to the improvement of local industrial health problems only if they have a clear knowledge of their existence. To do this they must familiarize themselves with plant processes. This familiarity can be gained best by plant surveys, made with the full utilization of the technical services readily offered by private or governmental agencies, safety and engineering groups in the discovering, evaluation and solution of the many problems affecting the environment of work. These include excess noise, faulty lighting, heat, exhaust and ventilation, sanitation, concentration of dusts and toxic substances in excess of established standards, chemical and mechanical hazards.

Health education in plants should be stressed by talks and by distribution of pamphlets. The value of the practice of a good brand of personal hygiene including nutrition can be emphasized. Management can be informed of the betterment in human relations to be brought about by improvement in environmental hygiene, in the form of good housekeeping, control of rodents and vermin, provision of adequate locker space, toilet, washing and eating facilities. Employers can be told with assurity that their interest in these things will make their employees healthier, happier and prouder of their place of employment and their product.

Physicians should cooperate wholeheartedly with official agencies in the reporting of occupational diseases. Such diseases have been defined as "diseases which arise out of and in the course of industry." No public health agency can establish effective programs for preventing or controlling diseases without knowledge of when, where or under what conditions they are occurring. It should be emphasized that these reports are held in strict confidence by official agencies.

Established industrial medical services should be impressed with the necessity of doing a good job for, in addition to the satisfaction that comes from doing a job well will come increased confidence of the worker in the profession. Supreme degrees of patience and kindness should be exercised in the handling of industrial injuries and illnesses. This will accomplish more toward the proper and equitable conclusion of cases than the display of learned attitudes. Industrial physicians must devote their primary efforts to the benefit of the patient and, at the same time, in absolute fairness, protect the interest of all others concerned.

The establishment of modern comprehensive health services in industry should be encouraged. In these the full knowledge amassed by the medical and allied professions, including dentistry and nursing, should be mobilized and made available for application. Management should be made cognizant of the multitudinous advantages of the application of principles of hygiene to industry. The value of rehabilitation programs, preemployment physical examinations and periodic physical examinations for top management as well as labor should be stressed. Mass surveys should be conducted and full advantage taken of the facilities of public and private agencies in the discovery of specific deficiencies in such fields as eyesight, dental hygiene, tuberculosis and syphilis. These modern comprehensive services should be made aware of their responsibility and, through industrial health committees, urged to promote the cause of industrial health in their Chamber of Commerce so that the full cooperation of management and labor may be secured. They should participate in the organization of safety committees as described in the U. S. Department of Labor, Bulletin No. 86, "Guide to Industrial Accident Prevention Through a Joint Labor Management Safety Committee." This bulletin, sent free upon request, describes, step by step, an eight point safety program with outline of the methods of procedure for organization, meetings, inspection, recommendations and accident prevention.

With the present rapid growth of appreciation for the contribution which the medical profession is making will come the demand for increasing numbers of physicians on a full or part time basis in industry. It is incumbent upon all to prepare to meet the challenge, to prepare to lead the way toward the attainment of optimum health among the working population in the environment of their employment.

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INDUSTRIAL DERMATOSES AND THE ECONOMIC IMPORT

E. P. MONAHAN, M.D., *Kansas City*

Tilbury Fox, in 1876, writing in his "Epitome of Skin Diseases," said: "Diseases of the skin are spread or take on an inflammatory character by exposure to irritating agencies such as heat, cold, scratching, contact with acrid substances of all kinds as by handling lime, sugar, caustic soda, etc., the victims being bricklayers, grocers and washerwomen."

The dictum of this pioneer, though commonplace at the time, has become momentous in its application. Medical history has little to add in the lapse after Fox until World War I and the decade following when one finds increasing records of occupational dermatoses. Suddenly, medical science found itself grappling with almost a new entity. Epidemic in behavior, crippling in its effects, many thousands of employees were laid off for indefinite periods. The loss in work days and the general deteriorating effect on industry offered a new problem to the employer and the employed, liability companies and the doctor. The magnitude of this medical problem can best be seen by calling attention to certain facts and restating data compiled by the U. S. Public Health Service and other men working independently. In 1938, Schwartz made a study of English and American industries to determine the incidence of occupational dermatoses. He concluded that it was 1 per cent for all industrial workers. Moreover, he made an analysis of 32,512 cases reported among workers in seven states during the period of July 1938 to October 1943, plus 9,116 cases previously reported. Brinton and Schwartz showed that petroleum products and greases were responsible for 18.8 per cent of the cases, alkalies (and cement) for 11.7 per cent and solvents for 7.8 per cent. After examining the compensation records of several states he found that the average loss of time per year for compensated cases of occupational dermatoses is about ten weeks and the average compensation paid is about $100.00. It, therefore, is estimated that the annual loss from occupational dermatoses in the United States is approximately $100,000,000.00.

As World War II began there was a wide expansion of all industries and the creation of many new ones. Men and women suddenly thrown into environs of permeating irritating substances, working overtime in poorly ventilated places became inevitable victims of dermatitis. Writers began to contribute reports and dermatologists generally began to regard industrial dermatoses in the light of a major problem. In 1928 the U. S. Public Health Service created the office of "Dermatoses Investigation" placing it under the direct supervision of Louis Schwartz, M.D., of the U. S. Public Health Service. Out of this has grown much constructive planning; industries have welcomed any and all suggestions from that office. It is safe to say that efforts to cope with the problem have been greatly rationalized. This responsibility carried Schwartz deeply into the field of industrial skin ailments and, perhaps out of the wealth of experience, sprang a monumental volume, "Occupational Diseases of the Skin," by Schwartz, Tulipan and Peck. In it are answered the numerous questions that daily confront the physician caring for his dermatologic practice. The medicolegal aspects of compensation, diagnosis, borderline cases, malingering, methods of prevention and treatment are considered carefully. Doctors working with skin diseases will find a good friend in this 960 page illustrated book.

The dermatologist, viewing the situation as a whole, laboring with the individual problem of treatment, classifying his cases to satisfy every ethical angle has learned many things. He knows that his history criteria must be exhaustive and final. He must have data from both employer and employee so that at all times there is complete cooperation in all phases of the case from date of the examination to date of the dismissal. He knows that many of his cases have a common symptomatology; many are bewildering in intensity and rebellious to his remedial efforts, and there is no known specific therapy.

Clearly, then, the rational view would be to put more stress on effective methods of prevention in the hope of staying skin accidents and reducing the long periods of treatment. I firmly believe this can be accomplished. However, one cannot hope for success from haphazard efforts by those not qualified for the job. The immediate environment of the employee is most important; there should be moving air to carry away any noxious fumes or dust. The skin should be protected with impervious work garments if the task calls for it. Personal cleanliness should be had, using the mildest cleansers in soaps and detergents—not harsh, gritty agents often seen in plants. It is a matter of common observation that many workers leave the job in their plant uniforms. It may be assumed that this individual goes home, eats his meal and probably lies down for a nap or he may engage in a more or less active domestic task for an hour or two. He may then retire without a bath. The next day he dons the same clothes which are now saturated with factory dust, dyes, metals, oils or powders.

Number one, then, should be proper supervision; number two, dress for the character of the work to be done; number three, keep clean by a daily change of clothes and the use of mild cleansing agents. The matter of protective creams, lotions, greases or films may have some value; they are

being used in many plants with indifferent reported results. When so many different materials are encountered, the discovery of a universal protective substance presents a difficult task. In the meantime, the real panacea must still be sought. Specifically, with this program of preventive measures being considered, there should be a definite order in which the individual examination is conducted. I quote E. S. Lain whose outline seems most clear and complete:

CRITERIA FOR DIAGNOSIS

History.—In no field of medicine is the taking of a careful history and an acquaintance with industrial chemistry more essential than in the care of industrial employees.

(a) Was first appearance a reasonable period after beginning present work?

(b) Did eruption first appear over the unprotected areas?

(c) Have other fellow workers been similarly affected or does medical literature report other cases from similar exposure?

(d) Does removal of worker from present environment for a period of not less than one or two weeks improve his condition?

(e) What other possible contacts may occur at home or during their off hours?

Examination.—(a) Examine the entire skin surface of the stripped body, including feet for fungus infection and the oral mucous membranes for possible evidence of nonindustrial diseases.

(b) Note character of primary or first type of lesion, location, spread and changes which may have occurred from treatment.

(c) Is eruption worse over areas where contaminated or poorly laundered work clothes and perspiration may have been contributing factors?

(d) What water softeners or bleaching chemicals have been used in laundering of work clothing?

(e) Is eruption of a bacterial type and does it cause any elevation of temperature?

(f) Finally, make patch tests with suspected irritant moistened preferably with perspiration.

Testing.—The patch test consists in moistening a small piece of gauze or square of filter paper with the material to be tested. This is applied to the skin and covered with cellophane and secured by a small strip of adhesive tape. The testing substance is left on for from twenty-four to forty-eight hours; oils require more time and should be left for as long as five or six days. Instructions are given the recipient to remove the patch as soon as itching begins. Alcohol or ether should be used. Positive reaction is shown by erythema, vesiculation or edema or all may be seen together. Interpretations are read 1 plus, 2 plus, 3 plus or 4 plus —the degree of intensity depends upon the phenomena mentioned. If the subject tested is positive he should be bracketed as "vulnerable" and not allowed to work on that particular job. Argument has been offered that in theory the patch test is worthless because the individual has not hitherto been contacted with the substance in question, therefore the law of allergy has not been satisfied: i. e., there does not exist "a state of altered activity." In answer to this, Schwartz points out that at least three tests should be made at ten day intervals; this, he calls "the prophetic patch test." He, moreover, divides the job applicants into class (1), in which there has been previous contact, and class (2), in which the patch constitutes the first and only contact. This procedure lies strictly within the pale of prophylaxis; its feasibility is obvious and the plan is rational. In times of contagions, similar steps are taken when the greatest degree of immunization is desired. The modus operandi of the industrial testing is much the same and entails less time, expense and hazard. No scheme will be found to be perfect; faulty technic, idiosyncrasy, former diseases, variations in the suspected allergen, will emphasize the importance of accuracy from the beginning of the case history to the lifting of the patch.

Physical examination and the taking of the history are of special importance. One seeks to accomplish this by modern methods of examination such as every good laboratory has available. Too often, the conception of a "physical check-up" has been a stethoscope to detect a rale or murmur and a "sample" for a Wassermann. In the years of the recent industrial nightmare, every factory toiler, every clerk, cook, blacksmith and chaeffeur was tested for syphilis. Out of the multitude there came thousands of positive reactions from one plus, two plus, three plus, four plus and plus minus or doubtful. Figures are not available but every doctor who went through this experience will say that scores of wartime applicants with positive blood had no history of the disease nor did a thorough examination reveal one single sign of syphilis or the slightest physical disability. The result was practically an epidemic of syphilophobia throughout the country. Many refused treatment on the ground that their health was perfect; the rest were given intensive courses of antisyphilitic remedies. This leads me to make the observation: Had the same amount of zeal and money been expended in examining for diabetes, anemias, focal infections, nephritis and some other diseases as was spent in chasing down and recording negative, doubtful and Wassermann fast reactions, much of the hysteria that shrouded industrial plants, hospitals and offices could have been avoided. I am not unaware of the fact that much good resulted from the antisyphilitic program; I am only emphasizing that thousands of good strong men and women were indicted as syphilitics on account of a "plus Wassermann" with no findings to support it.

In discussing treatment it will be sufficient to use the established terms, acute, subacute and chronic, in this discussion of industrial dermatoses. I believe that in the zeal to hurry patients along they

often are overtreated. In a case of acute generalized dermatitis with involvement of the face, ears, eyelids, genitalia, hands and feet—the picture of a desperately sick skin as well as a sick morale—speed is the thing most sought by the patient. Exactly at this point is the time to tell the unfortunate patient that he is not going to get well in twenty-four hours but that his affliction may last from ten days to six weeks. Unless this is done the doctor may expect annoyance and poor cooperation. More and more the tendency is toward the simplest remedies in treating the acute skin case. Saline, boric acid solution, starch water, aluminum subacetate, acetic acid and potash are all examples of excellent lotions and are all friendly to a hot, weeping skin. A dictum which I learned from my old professor and which I never forgot is, "Never put on medicine that brings discomfort to the patient."

Acute and subacute stages demand drainage. It is obvious, therefore, that the medication in no way interferes with the free passage of toxic materials. These materials which are aqueous in character are not released through greasy remedies. Ointments put on an aqueous oozing surface defeat the thing one is trying to do by sealing in the offending agent. In chronic conditions in which dryness, fissuring and scaling are present, oils and ointments have their place. Powders may be used where absorption is desired; a good list of well known powders includes boric acid, zinc stearate, zinc oxide, starch, aluminum silicate (Fuller's earth), calamine and tannic acid. Certain cases seem to be benefited by parenteral courses. Here again specifics are wanting; vitamin concentrates, thiosulfate and calcium are favorites with many dermatologists. The efficacy of "shots" of any kind is distressingly disappointing in industrial dematoses.

Roentgen ray has its place in the therapy of occupational dermatoses but it must be used in subacute and chronic stages only. Generally speaking, the acute symptoms pass into the subacute phase in a couple of weeks; edema, vesiculation and oozing cease and the picture is one of dryness, scaling and fissuring. Pruritus may still persist mildly or in some degree of severity. Roentgen therapy can then be applied with safety in S. E. dosage at intervals of from seven to ten days and carried on to the completion of the case. It has no substitute in bringing relief and hastening recovery.

It is safe to say that no bodily ailment has called forth the same multitudinous array of "cures" as have diseases of the skin. Remedies by hundreds line the drug stores in every community. Phenol, menthol, camphor, tar, mercury, glycerine and scores of others have been put in combination with greases and dyes to smear on the human skin. They are in the main worthless. The custom of using paints such as iodine, merthiolate, gentian violet and brilliant green has no rational claim in sane medical practice. A successful method of losing sight of a clinical picture is to paint over it. Patients already suffering from an allergic dermatitis often have been given an additional one from the use of the dye treatment.

Finally, the solution is with the dermatologist; it will be his zeal and clear understanding of the problem that will bring the answer.

SUMMARY

1. A new major problem is discussed.
2. Huge economic loss is pointed out.
3. Solution of the problem will call for untiring and careful planning.
4. Industry, medical science and employee must cooperate.
5. Importance of rigid physical examination is imperative.
6. A brief review on therapeutics is offered.

814 Argyle Building

HEALTH HAZARD DUE TO OXIDES OF NITROGEN IN A "BRIGHT-DIP" OPERATION

An investigation was made recently of the electroplating department of a manufacturing plant employing about 350 workers as a result of a complaint made by employees. The electroplating department was newly installed having been operating for only a few months.

During the course of the inspection of the plating department, a sharp, acid-like odor was detected. The cause of the odor was determined to be the oxides of nitrogen formed as a result of a bright-dip operation carried out near the center of the plating room. Heavy clouds of reddish-brown fumes were evolved when the operator placed the metal parts into a crock containing concentrated nitric acid. No local exhaust ventilation of any kind was provided and the individual performing the operation was observed to stand adjacent to the crock of acid as long as the parts remained therein.

The operator, and six other employees who worked in the vicinity of the operation, complained of smarting of the eyes and increased mucus flow in their noses. The obvious hazard to the health of the employees prompted the investigator to recommend the immediate discontinuance of the operation.

Fortunately in this instance the exposed individuals showed no further symptoms after the operation was discontinued. The company has discontinued this operation and is now working on a local exhaust system which will collect the fumes liberated when the metal parts are dipped into nitric acid.

ORGANIZATION OF AN INDUSTRIAL MEDICAL DEPARTMENT

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An industrial medical department should be organized from the viewpoint of physical equipment and personnel to fit the size of the plant it will serve and the type of service required. The scope of the medical service depends in part upon the social philosophy of the organization responsible for the department.

Complete medical care, embracing the treatment of nonoccupational conditions is not a function of the usual medical department. The majority of industrial corporations, as well as organized medicine, are in accord in limiting the services of the industrial medical department. They seek to avoid any conflict with the duties and responsibilities of the private medical practitioner. The American College of Surgeons states,[1] "The purpose of industrial medicine has been and always will be fundamentally the same, namely: 'The adequate care of the health of industrial workers.'" This body gives the main objectives of industrial medicine:

"1. To ascertain, by examination, the physical and mental fitness of employees for work.

"2. To maintain and improve the health and efficiency of those already employed.

"3. To educate the worker in accident prevention and personal hygiene.

"4. To reduce lost time and absenteeism from illness or injury."

These objectives and limitations are indorsed by the majority of industrial physicians, as well as by groups such as the United States Chamber of Commerce and the National Association of Manufacturers. However, some industries and labor unions have sponsored medical departments which provide medical care including the treatment of nonoccupational conditions. These are financed by prepayment of medical costs, either by the employer alone or jointly with the employees.

For thirty-four years the Tennessee Coal, Iron and Railroad Company of Birmingham, Alabama, has been operating such a plan.[2] Complete medical care is provided for 33,000 employees and 120,000 dependents. Similar plans are those of the Standard Oil Company of Louisiana, which has been in operation at Baton Rouge since 1924, and the Kaiser-Permanente group on the Pacific Coast during the last war. In all, more than one hundred prepayment medical care organizations have had their origin in industrial corporations. The most successful labor group installation is the Union Health Center of the International Ladies Garment Workers' Union in New York City. In 1946 it had a total of more than 160,000 patient visits and provided complete diagnostic and ambulatory treatment for all medical conditions, including those of nonoccupational origin.[3] In other cities, including Detroit and St. Louis, similar plans are supported by various labor unions. More detailed discussion of this type of medical department is outside the scope of this presentation.

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PHYSICAL PROPERTIES

The medical facilities for an industrial establishment should be located directly in the operational area. This is necessary to bring the physician to the scene so that preventive industrial medicine and surgery can be practiced. The employee population will determine the physical size and equipment of the medical installation.

The plant with a few employees will be forced to depend upon a first aid kit and a means of transporting the worker to a physician. As the number of employees mounts, space for a first aid room can be justified. The plant with more than one hundred employees should afford an area 10 by 20 feet, which can be divided into two rooms to insure privacy for examinations and treatment. The space needed increases with larger employee populations. A working basis of 1.5 square feet of space per employee per shift has proven valuable in estimating the area required for plant medical departments. Where several thousand men per shift are employed the space requirement per man is less.

The plans for dispensary layouts, the equipment needed, the desirability of laboratory and roentgen ray facilities are all individual problems and are not amenable to elaboration here. It is surprising how efficiently space can be utilized. One chemical manufacturing plant employing a peak shift load of 1,200 men is served adequately by a combination treatment room and laboratory (Fig. 1) which oc-



Fig. 1. Dispensary, John F. Queeny Plant, Monsanto Chemical Company.



Fig. 2. Recovery Room, General Office Dispensary, Monsanto Chemical Company.

cupies only 400 square feet. An adjoining complete roentgenologic department with dark room was installed in a 10 by 16 foot area. In planning any dispensary which serves a large number of female employees, cheerful and well furnished recovery rooms are important (Fig. 2). The Council on Industrial Health of the American Medical Association has published articles giving floor plans and suggested equipment for industrial medical departments.[4] Many of the casualty insurance companies have experienced engineering services which will furnish drawings of medical layouts tailored to fit the space available in any particular plant.

PERSONNEL

The number and qualifications of the medical department personnel likewise depend upon the number of employees, but a more important factor is the occupational exposures expected. In the plant having about 1,200 employees one full time physician can be justified; an additional physician is needed for every additional two thousand employees. Certain types of manufacturing with special exposures might require twice this amount of medical attendance.

However, 90 per cent of this country's manufacturing units have less than 500 employees and more than 70 per cent of workers are employed in these smaller plants. A part time physician can direct the functions of the medical department in this size factory. When several plants are in one neighborhood, one industrial physician can divide his time profitably among them. The usual time spent at each plant is one hour per week per 100 men.

The emphasis in industrial medicine has changed in recent years from the reparative to the preventive point of view. This has altered the desired qualifications of the industrial physician. The training that he needs is not predominantly surgical as heretofore, but rather that of the internist. It is common practice to refer to appropriate specialists the traumatic conditions the industrial physician feels are outside his particular field.

Industrial nurses form an important part of the medical department. They function in carrying out the physician's standing orders for treatment as well as in supervising health education for the workers. In smaller plants they may be the only medically trained individuals who visit the manufacturing sites.

Laboratory and roentgen ray technicians are needed wherever the department is large enough or has specialized functions which require these additional services.

Industrial hygiene engineers are filling a definite and increasingly important role in the medical department. The evaluation of manufacturing processes which result in exposures to toxic materials is generally a problem which the industrial physician and plant operational personnel are not prepared to solve. The quantitative analysis of such exposures, and the methods by which they may be eliminated or reduced to hygienic levels, require a knowledge of chemical technics and engineering which can best be obtained by specialized training and experience. With the clinical and toxicologic guidance of the physician, the industrial hygiene engineer provides a service which adds to the completeness of the preventive medicine program.

It is evident that the large industrial medical department includes technically trained individuals with various educational backgrounds. The physician, the nurse, the physicist, the engineer, the chemist and the medical technician must work harmoniously in achieving their common goal. The final responsibility of protecting the workers' health rests with the physician but he is dependent in a large measure upon the technical skills of fields closely related to medicine. The industrial medical department as a unit has administrative relationships with the other departments in the industrial organization. The position of the medical department in the industrial pattern will not be

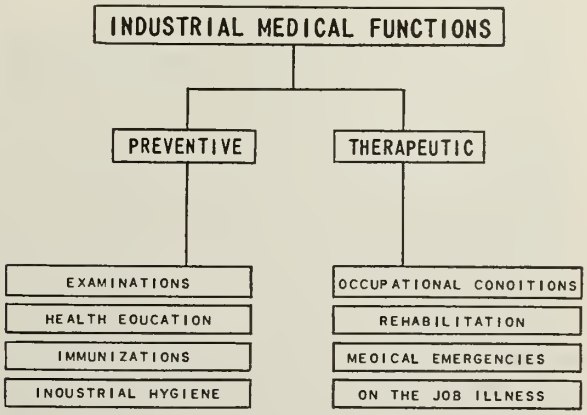


Fig. 3. Diagram of the functions of an industrial medical department.

discussed but the consensus is that the medical department functions best when it is responsible directly to the operating management and not through any intermediate echelon.

SPECIFIC DUTIES

The ideal industrial medical department accomplishes its objectives by fulfilling definite preventive and therapeutic functions (Fig. 3). Industrial medicine had its beginning in the surgery of trauma and the description of occupational maladies. Dramatic as this aspect is, the preventive phase of industrial medicine is occupying more and more of the physician's time. Absenteeism from illness represents the serious monetary loss to the wage earner and employer. It should be remembered that 92 per cent of absenteeism is due to nonoccupational medical causes. Justification for the expense of a medical department can be shown by its part in combating the loss of productivity due to sick absenteeism.

Examinations.—The foundation of preventive medicine in industry is a system providing a periodic health inventory for each worker. This starts with the preplacement examination. Its purposes are to assign the prospective worker to duties compatible with his physical condition, to prevent the transfer of communicable disease and to furnish a base line for future examinations.

Periodic examinations follow at regular intervals, preferably annually. These examinations are not designed to exclude the worker from continued employment. They provide checks on the state of health of the individual and may indicate the need for transfer to a different type of work in the organization. They are designed to detect incipient illness at a time when therapy is most effective. This is particularly true in tuberculosis, precancerous or malignant changes and cardiovascular diseases. The value of periodic examinations in the early emotional and anxiety states is important. A thirty minute ventilation of mental conflicts by the employee to an understanding examiner may show the need for psychiatric counsel or, in simple cases, even effect a recovery.

Examination of the executive personnel is a function of the industrial medical department that has increased in prominence relatively recently. During the war years many companies suffered serious losses from the ranks of their top personnel. The causes were mainly cardiovascular in origin, with myocardial infarction proving to be the executives' occupational disease. In view of the supplementary burdens of material shortages, labor negotiations, social-business evening duties, and plant expansion, added to the not insignificant task of operating a business at a profit, such a development is not unexpected. A complete annual examination should be provided. This examination should include electrocardiographic, chemical and roentgenologic studies, which are most valuable when interpreted on a year-to-year basis. If the examiner is in a position to know and evaluate the mental and emotional stresses of executive management, especially as applied to the individual examined, the interpretation of the findings is more accurate.

Health Education.—The industrial medical department has a unique opportunity and responsibility to advance the community health, as well as the health of the employees. Health education can be carried out provided an integrated program is set up in the plant. Posters, pamphlets, pay envelope inserts, columns in employee publications and personal interviews, especially at the time of examination, can be utilized to disseminate the information conducive to better physical and mental hygiene. Adequate material is available from many sources. Group insurance and casualty insurance companies provide leaflets and posters. The national headquarters and local chapters of societies such as the American Heart Association and the National Tuberculosis Association are extremely helpful. This work should be correlated with, and can be aided by, the various governmental public health agencies. The majority of local medical societies have a committee on public health which can be consulted in organizing such a program.

Immunizations.—The industrial medical department should be prepared to carry out any immunization procedures that are required in its particular installation. Individual immunizations of the type administered by the family physician are not given but mass immunization in the case of smallpox exposure or an influenza epidemic may be needed. The necessity of preventive measures of this sort presents an individual problem because of the groupings of large numbers of people and is not in conflict with the responsibilities of private physicians.

Industrial Hygiene.—The industrial hygiene engineer is responsible for providing a healthy working atmosphere by the elimination or reduction of atmospheric concentrations of harmful dusts, gases, vapors, fumes and mists. These might be a source of injury to the respiratory tract itself or, by absorption, might result in damage to other organs. Following preliminary surveys of all plant operations and processes, the industrial hygiene engineer collects atmospheric samples at frequent intervals. He then determines by chemical, physical or other analytical methods the degree of hazard associated with the individual exposures. Where indicated, recommendations are made for control measures such as the substitution of less toxic materials, change in operational procedure, the installation of or modification of ventilating systems or the use of respiratory protective devices and protective clothing. The recommendation must be specific and, once submitted to plant management, must be followed up by revisits and reanalyses to insure the desired changes or additional controls

being effected. The value of consultation with the industrial hygiene engineer on the part of research and pilot plant personnel should not be overlooked. Such consultations may frequently result in detecting occupational health hazards in the stage of development and allow worker protection as well as monetary savings in the design and operation of production scale equipment.

Treatment of Occupational Conditions.—In spite of the accent on the preventive phase of industrial medicine, the treatment of occupational conditions is the motivating factor in the establishment of an industrial medical department. It is definitely of paramount importance to the individual worker. Adequate care of industrial injuries can be assured only by having a well defined pattern of treatment procedure for the injured worker. This is inaugurated by the fellow-employee who first reaches the scene of the accident and should follow prescribed procedure until expert medical care is available. Whether or not nursing and medical personnel are in attendance, the workers must be educated in first aid. Certain conditions, such as chemical eye burns, cyanide fume inhalation or contact with high tension wires demand action in the first seconds. This action must be taken by the first person to reach the scene and he is usually a nonmedical individual.

Rehabilitation.—Rehabilitation of the injured worker gradually is asuming the place in industrial medicine that it occupied in the treatment of military casualties. In some areas of the country, notably New York, Boston and Galveston, rehabilitation centers are successfully returning the injured worker to his preinjury status. These centers are too large for any except a few large industrial concerns to operate by themselves. The centers operating at present have been developed in cooperation with community, university or insurance groups. It is hoped that more attention will be paid to this part of occupational treatment.

Emergency Nonoccupational Conditions.—All industrial medical departments should be prepared to furnish treatment for medical emergencies occurring in the plant area. Employees who develop myocardial infarction, ureteral colic, intracranial hemorrhage and other grave conditions during working hours must receive adequate and prompt medical attention. In these cases the responsibility of the industrial physician ends when the patient is transferred to his private medical agency. This transfer should be effected as soon as compatible with the employee's safety.

Nonemergency Nonoccupational Conditions.—Frequently medical conditions of a nonoccupational nature are brought to the attention of the industrial physician. These may be serious nonemergency illnesses or they may be of the type that ordinarily would not cause the worker to seek private medical consultation. In the former instance only interim treatment is administered and the patient is referred to his private physician. In the latter type of case, one visit treatment usually is provided. This avoids loss of productivity and may forestall the development of serious illness. Often a diagnostic evaluation of these complaints from the preventive point of view will disclose signs of beginning illness months before more compelling symptoms would have caused the employee to seek private medical attention.

SUMMARY

The organization of an industrial medical department has been outlined from the point of view of physical equipment, personnel and functions. The characteristics of the medical department will vary with changes in the size and type of the industrial establishment. The specific duties of a well functioning medical department have been discussed.

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LEAD IN A BRONZE FOUNDRY

As a result of several cases of severe lead poisoning reported to the Industrial Hygiene Service an investigation was made of a bronze foundry in Missouri. Air analyses made in the plant showed high lead concentration throughout the plant and particularly in the foundry room. Following a conference with the plant management and an additional confirmatory investigation by the industrial hygiene personnel of the company, recommendations were made for the control of the lead hazard. Because of construction delays in this period considerable time was required to carry out the recommendations completely. Air studies were repeated at intervals during this period and showed a decrease in lead concentrations as effective control measures were put into operation.

Along with this program of environmental control a limited medical control program involving stippled cell counts on blood samples was inaugurated. No further cases of lead poisoning have occurred. Lead concentrations in the furnace room are not satisfactory as yet, but workers in this area are using respirators for protection. Construction is now being carried on to improve the ventilation in this room. It is hoped that this last measure will reduce atmospheric lead concentrations below the limit of one and one half milligrams per ten cubic meters of air.

Recommendations have been made for extending the medical phases of the control program to include all workers in the foundry with more extensive laboratory procedures. Lead is a usual constituent of brass and bronze and its proportion may vary from 5 to 20 per cent by weight.

THE PLANT PHYSICIAN AND HIS INDUSTRIAL PREVENTIVE MEDICAL PROGRAM UTILIZING INDUSTRIAL HYGIENE SERVICES OF THE PUBLIC HEALTH DEPARTMENT

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All who have occasion to deal with the industrial segment of the community continually should bear in mind the dictum of Dr. George M. Kober: "Health is the chief asset of the working man and no greater calamity can befall him than when his earning capacity is impaired or arrested by reason of sickness or disability." Aside from sentimental or philanthropic motivation, enlightened self interest on the part of management and the community should be a stimulus to action in seeing that the health of the industrial population is not impaired as a result of injury or disease, especially from disease arising directly out of industry.

Plant or industrial medical activities vary greatly in their scope, ranging from the barest first aid service to complete health service for the employee. The extent of the health or medical service given to the employee, as a rule, depends on the size of the plant, the nature of the industry, the wealth or economic security of the corporation and the traditional attitudes of the corporation toward its employees.

Concerning the value of industrial health services, there is ample evidence that a well planned and conducted health organization ultimately results in a saving to management that can be expressed in dollars and cents. The value of planned medical activities for the worker are largely intangible but that they are real values no experienced industrial relations official will deny. Morale of employees is improved when the workers know that injuries will be attended to promptly and capably by qualified professional personnel. Employee morale is maintained at a high level when it is known throughout the factory that illness occurring on the job will be cared for promptly, competently and sympathetically. Employee morale is improved when the worker is convinced that the medical activities are not used as an excuse to sever a person from his job but are directed to the opposite goal—maintaining workers in a healthy condition and restoring the sick or injured to full earning capacity as rapidly as this can be accomplished without hazard to their health or safety. An employee with good morale is a contented employee and a contented employee is more loyal to the company and loyal employees mean more production and less labor turnover.

The industrial physician is, without doubt, the truly key figure in the entire industrial medical scheme, followed closely in order of importance by the nurse. As in private practice, both professional skill and the proper personality, together with interest in his work, are essential qualifications for the physician's success in this field. In ability to detect defects or shortcomings in the plant medical set-up, employees should be regarded as "dumb—just like a fox." They readily make an estimate of the plant medical organization and are quick to detect an impersonal or unfriendly attitude on the part of a physician with perfunctory performance. The entire medical set-up thereupon suffers a loss of importance in the estimation of the workers. An attribute which may be described as fairness is also essential. This should mean that the physician is not a "company man," shading and slanting his action and opinions to favor management to the detriment of the sick or injured worker. To sum up, the confidence and high esteem of all the workers is best obtained and held when the entire plant medical department displays a warm personal interest in the case of the sick or injured employee and backs it up with good medical service.

The industrial medical program, ideally conceived, may be said to begin when the applicant for employment has completed the preliminaries of asking for work. A complete physical examination of the applicant is in order. This should include a brief but complete occupational history, serologic examination, urinalysis, a chest roentgen ray and an examination for visual acuity, both near and far. In certain types of work, emphasis may be placed on certain phases of the examination. For example, in certain dusty occupations (sand-blasting, foundry work, asbestos processing) roentgen rays of the thorax may be of paramount importance. In industries in which the employee is exposed to various atmospheric contaminants such as dusts, mists, fumes, vapors or gases, a knowledge of the proper functioning of the liver, kidneys, blood forming organs or the central nervous system may be of prime importance. In some types of work, visual acuity is an attribute of great value. The purpose of the preemployment physical examination is, therefore, primarily to serve as a guide to job placement; secondly, to advise the employee as to his physical defects in order that remedial action can be taken whenever possible; and, lastly, to protect the employer from the liabilities arising from the potential invalid on his payroll and from fraudulent occupational disease

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claims. The periodic examination is of value in detecting disease in its earlier stages among those who have been employed for any length of time so that corrective or remedial measures may be instituted in order to prevent further progression of the disease.

Serologic test for syphilis is always of value. Early or late latent cases of syphilis thus may be detected and the employee placed under treatment. The employee, or applicant for employment, with infectious mucocutaneous lesions should not be employed until treatment has effected a noncommunicable stage of the disease. It is held to be poor policy, however, to reject or discharge from employment a person merely because of syphilis. Communicability, or organic impairment, especially of the central nervous system, should be the indices for such action rather than a positive serologic test.

At this point it would be well to indicate that in his physical examination procedures, the modern industrial physician now is combining his influence with management and workers and his medical knowledge and skill in developing a program for the job placement of the disabled. Bearing in mind that most disabled people are possessed of more ability than disability and that many so called handicaps are more apparent than real (in an economic sense) the physician is in an unusually favorable position to assist management in properly placing the handicapped in productive jobs. The attitude is not one of charity but rather one of assisting such people in obtaining useful employment and hence not becoming a burden on the community. At the same time it permits the plant to receive the benefit of special skills which many handicapped individuals possess.

Immunization of the employees should not be neglected. Vaccination against smallpox is always advisable. When an epidemic of influenza impends, influenza immunization should be made available to the workers. Physicians with plants situated in the smaller communities would do well to consider immunizing their employees against typhoid and paratyphoid fever.

Worker health education is a highly desirable function of the plant medical department. By this is meant education at the popular level in matters of healthful living and disease avoidance. This should not be attempted by formal lectures but by means of posters, pamphlets, advice given during dispensary visits and at the time of physical examination. Needless to say, the nurse, because of her frequent contact with employees, will play a leading role as a health educator.

Ideally, the industrial physician should attempt also to be an industrial hygienist. To put it another way, he should become familiar with all of the dangerous, or potentially dangerous, processes to which employees in his plant are or may be exposed. Furthermore, the general environmental conditions of the workroom such as lighting, heating, ventilation and humidity control come within his purview, insofar as these conditions affect employee health.

The industrial physician should have complete knowledge of the various processes going on in his plant. If employees are subjected to toxic, or suspected toxic, exposures the plant physician should know: (1) the nature of the materials used in the process, whether they are inert, only slightly toxic, moderately toxic or highly toxic; (2) number of employees exposed to such conditions; (3) whether the operations are continuous or only intermittent; (4) whether there is any record of excessive illness or absenteeism among the employees on such jobs.

If materials of unknown or questionable nature are used, their chemical and potentially toxic nature should be ascertained. The concentration of these materials in the plant atmosphere should be determined also. In determining the nature of materials used and their atmospheric concentration, assistance may be secured from an official industrial hygiene agency, either state or city.

When a toxic exposure exists, the industrial physician together with management should take steps to see that the dangers incident to this exposure are mitigated or eliminated; for example, by local exhaust ventilation, enclosed processes, protective garments. Employees should be instructed as to the approved technics for self protection.

It is not believed that every working condition has a directly adverse effect on the employees' health. It must be admitted that many jobs or types of work, including the general workroom environment, are perfectly inocuous. But repeatedly questions arise of whether or not specific working conditions tend to injure the health of the employees. Enlightened self interest on the part of management should prompt it to seek an answer to these questions. It is simply good common sense for an employer guided and advised by the industrial physician to determine whether or not a specific job operation is dangerous to the workers' health and, if so, why and how it is dangerous and to what extent. Advice then can be sought on how such dangers can be eliminated or, failing that, how they can be controlled. Assisting management and the industrial physician in such problems is the function of the industrial hygiene activities of the official public health agencies either state or local. Trained engineers are available to secure and analyze "atmospheric samples." This means that representative samples of mists, fumes, vapors, gases and dusts in the workroom atmosphere are collected and analyzed for their nature and concentration.

As an example of some of these activities, the atmosphere in the immediate vicinity of a degreasing operation may be tested for the presence of trichloroethylene vapor (a frequently utilized de-

greasing agent) and a determination made of the amount of trichloroethylene to which the workers in the immediate vicinity may be exposed. Again, the air in a brass and bronze foundry may be tested for the presence of lead or zinc fume at such times as the melting and pouring operations actually are being carried on. Recently, an interesting and rather unusual investigation was made in a small plant engaged in the painting of watch dials with radioactive luminous compound. The amount of radon (radium emanation) in the air of the workroom and also in the exhaled air of the employees was determined. These are cited as examples whereby conditions potentially harmful to employees may be evaluated by using engineering and chemical technics.

It is of value to the plant physician to take the initial steps in seeing that these industrial hygiene engineering activities are performed in his plant when he has reason to suspect that conditions are inimical to employee health. In the first place, it will eliminate the element of guess work or conjecture. Specific data, of either a positive or negative nature, is always better than no data. Secondly, the prestige of the physician will be enhanced when, on his initiative, environmental conditions harmful to the workers' health are detected and controlled. It goes almost without saying that action taken before injury occurs produces a greater total saving in health and economic values than the same action taken after injury has taken place.

In addition, consultation and advice in other matters immediately related to employees' health usually are available from an official health agency. These services take the form of advice in the matter of suspected occupational diseases, in arranging for surveys of the employees for the discovery and early treatment of tuberculosis or venereal disease or in instituting immunizing procedures for the employees. This latter type of work is always done in cooperation with the plant physician. The industrial hygiene nursing consultant is available to the plant nurse for aid, advice and suggestions to enable the nurse to fulfill her duties better in the plant medical program. To be somewhat more specific the consultant nurses's function may be summarized as follows: (1) to be familiar with the problems that confront the individual nurse in industry through visiting the industrial nurse at her place of work; (2) be available, on request, to consult with individual nurses on such problems, and (3) stress preventive aspects of industrial nursing through employee education in matters of personal hygiene, eating habits and safety measures.

The function and services of these official industrial hygiene units are in no way inquisitorial; there is no intent to gather evidence to be used legally against an employer. The sole function of the industrial hygiene activity is to protect employees from hazards to health which may occur as a result of their jobs. Physicians engaged in industrial practice who, in the course of their work encounter problems related to employee health and who believe or suspect that the ill health of the employees may be due to some adverse condition in the workroom environment, need not hesitate to inquire for advice and assistance in reaching a solution or clearing away causes of worry. The public health agencies, through their industrial hygiene services, are ready to assist the industrial physician in solving his problems.

The responsibilities of the industrial physician are many and perplexing; his problems oftentimes are truly unique. On the other hand, he has an unusual opportunity to render valuable service to employees, to management and to the community. Through such means he increases the value and recognition of his services by those who receive them. The industrial hygiene units of the official health agencies are available to assist the industrial physician and are anxious to lend their services whenever possible. By incorporating such specialized medical and engineering services as functions of his preventive medical program, the physician in industry can convince management that the employees under his care will remain healthy and on the job.

Department of Public Health.

CHROMIC ACID IRRITATION OR ULCERATION OF THE NASAL MUCOUS MEMBRANES

In the chromium plating process the materials to be plated are immersed in a tank of chromic acid solution. The parts to be plated act as the cathode and when a direct current is sent through the solution a coating of chromium is deposited on the parts. In this process hydrogen gas is generated at the cathode and escapes to the surface of the tank and disperses a fine mist or spray of chromic acid solution. Protection from the corrosive effects of chromic acid bubbles usually is afforded by means of exhaust slots placed on two sides of the tank which draw the mist or fine bubbles away from the operator's breathing zone.

In a particular electroplating shop, the lateral exhaust slots were working in a satisfactory manner but during a prolonged summer hot spell the worker set up an electric fan on the opposite side of the tank in order to have a pleasant stream of air playing on him while on duty at the plating tank. This air stream made him feel cooler but also blew the fine chromic acid bubbles into his breathing zone. He developed what he thought was a severe "cold in the head," followed by several spells of bleeding from the nose. A physician found an ulcer on the nasal septum. Chromic acid or chromates are well known to be destructive to the nasal mucous membranes.

The solution to this problem was instruction and supervision to the end that interference with the local exhaust system of the plating tanks should not take place.

THE NATIONAL AND STATE INDUSTRIAL HEALTH PROGRAM

W. SCOTT JOHNSON, *Jefferson City*

FUNDAMENTALLY, the interest of governmental agencies in industrial hygiene stems from the human need and economic desirability to protect the health of the adult worker. Essentially the problem is one of preventing sickness among this essential group as compared to the prevention of injury as the objective of an accident prevention program.

An industrial hygiene program concerns not only one of the most important groups but in its broadest concept should reach the approximate fifty million gainfully employed in this country. More intensively, efforts have been directed toward the fifteen and a half million employed in manufacturing, mining and mechanical plants. Within these plants there has been enumerated more than 15 hundred occupational exposures to some 128 groups of industrial poisons harmful to humans. To these hazards to the employee must be added physical handicaps that become serious unless known and taken into consideration in placement of the worker. Dublin and Vane[1] classify occupational hazards as follow: (1) abnormalities of air pressure, (2) abnormalities of temperature and humidity, (3) dampness, (4) defective illumination, (5) dust, (6) infection, (7) radiant energy, (8) repeated motion, pressure, shock, and (9) poisons.

Depending upon one's definition of industrial hygiene, many conditions of environmental sanitation surrounding working conditions and even community life may be responsible for sickness of the worker as well as conditions that "arise out of and in the course of employment."

For practical reasons the measure of the magnitude of sickness of industrial workers usually is expressed in absenteeism from work. It has been well established that the average worker in this country loses ten days a year on account of sickness and that the time lost from general illness is about fifteen times as great as the total amount lost from both accidents and occupational diseases.[2] This not only indicates the millions of man days lost per year from gainful work due to occupational diseases but also points out the importance of general sickness as a contributor to loss both by the employee and the employer. Consequently, in considering the over-all problem of keeping the adult worker well and on the job, industrial hygiene by necessity must accept the prevention of sickness of all types among workers as a broad concept of such a program.

Statistics are still inadequate concerning the incidence of occupational diseases due to poor reporting and incomplete coverage of compensation laws. However, accidents, occupational diseases and high occupational death rates are impressive among the workers based on scant data available. Nevertheless, the most important factor in lost time is due to general illness. U. S. Public Health Service data[3] indicate that respiratory diseases contribute 42 per cent; digestive diseases 13.5 per cent; and nonindustrial accidents 9.8 per cent of total illness among 200,000 male industrial workers.

The Committee on the Cost of Medical Care has estimated that the total cost for sickness in industry is five billion dollars per year.[4] All cost incident to accidents, loss of wages and replacement is about five billion dollars per year, making a staggering total bill for the nation for all types of disability approximately ten billion dollars per year.

An administratively perplexing aspect of a complete health protection program for the adult worker basically originates in the preponderance of small plants of less than 100 employees, about 90 per cent of the total. It is economically practical for plants employing from 500 to 1,000 or more to develop their own exclusive industrial hygiene service. For the much larger number of smaller plants this is obviously not possible. Those in the field of industrial hygiene have not to date developed a satisfactory, generally accepted plan that will provide an adequate industrial hygiene service for the smaller plant. At present less than 16 per cent of the industrial workers have the benefit of full-time medical services in plants.

In Missouri there are 1,297,000 persons employed, 14 years old and over. Of this number, about 341,000 are employed in mechanical, mining and manufacturing. These ratios are similar to those for the nation and studies indicate that the problems already indicated for the nation apply very closely to the average conditions found in this state.

Historically, occupational diseases were recognized between 300 and 400 years B.C. in at least one case, that of lead poisoning by Hippocrates. Ramazzini, known as the "father of industrial hygiene," wrote his famous classification and description of forty occupational diseases "De Morbis Certifican (Diseases of Tradesmen)" in 1700. Little more was added to the knowledge of, and less done about industrial hygiene, until 1831 when an English physician, Dr. Charles Teomes Thackrak, wrote his observations of the effects of industrial processes on health. The United States lagged behind England and Germany relative to interest in industrial hygiene until about the beginning of World War I. The second upsurge occurred during the depression of 1929 in response to an increased demand for social security. As regards official agencies, practically the entire scope of industrial hygiene was developed during the last depression

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Presented at the 89th Annual Session of the Missouri State Medical Association, March 30-April 2, 1947, Kansas City.

period. The recent World War II served to give substantial impetus to the infant program.

In industry, the development of industrial hygiene methods began with treating traumatic injuries. Gradually, in the larger industries, functions were expanded to include other medical and engineering phases of the problem. Preemployment and periodic physical examinations, job placement, medical and engineering control of occupational diseases and illness among workers gradually assumed more attention and importance in industry. Management is beginning to realize that reduction in lost time from illness can be secured by preventive measures and that the economics of such undertakings is sound.

At the federal level, industrial hygiene began largely as a result of responsibilities included in various types of industrial legislation, including workmen compensation acts. At present the major federal agencies involved are the U. S. Department of Labor; the U. S. Department of Interior, Bureau of Mines; and the U. S. Public Health Service, the latter since 1914. Up until 1935 these agencies were largely concerned with research; and in some cases, specific application; and, although considerable knowledge concerning industrial hazards was accumulated, little application in states and at local levels was undertaken.

Largely as the result of funds made available under the Social Secuity Act in 1936, it became possible to establish and develop industrial hygiene programs in state and local health departments.

No attempt will be made in this discussion to enumerate the numerous problems surmounted in the enormous task involved in establishing a country wide industrial hygiene program in the relatively short period between 1936 and the beginning of the recent war. Suffice it to say that extensive surveys, training of personnel, interest and support of various groups in addition to adequate funds had to be accomplished successively; and to a rather remarkable degree, these efforts were successful. At the present time, there are fifty services in thirty-nine states, employing 400 specialized professional personnel and being supported at the cost of about one and one half million dollars, and other services are in the process of being organized.

There are many nonofficial agencies in the field of industrial hygiene that have developed most active and worth-while programs and these have been important factors in promoting through their resources the over-all accomplishments in the field. The American Social Hygiene Association, the American College of Surgeons, the National Safety Council, the American Standards Association, and many others have not only taken deep interest but made many contributions to industrial health in their respective fields. Particularly the American Medical Association, through its Council on Industrial Health, has made a major contribution in the development of committees on industrial health among its state and county affiliates and has developed programs and standards for medical practice in industry.

Industry and many industrial agencies have contributed greatly to many phases of the problem. The National Association of Manufacturers and several trade associations, nearly all the insurance companies and the more aggressive labor unions have been active in the field in various phases.

It is apparent from this brief historical sketch that in the last ten to fifteen years the cause of industrial hygiene has been advanced in this nation by many official and nonofficial agencies far beyond normal expectations and to a degree that exceeds all previous accomplishments. Probably one of the most important conclusions to be drawn from recent experiences is that future advancements will be equally startling provided the pattern already set for cooperation between all types of agencies will continue with even more effective coordination of all facilities available.

In Missouri, industrial hygiene development followed closely the average pattern for the country. As occupational morbidity had not been reported adequately in Missouri to permit an evaluation of industrial health problems, it was necessary to appraise the health hazards in the various types of industry and service groups by personal surveys of the plants. A survey of this type was conducted in St. Louis City in 1934 by the City Health Department and the U. S. Public Health Service. Six hundred and thirty plants were visited and data pertaining to medical and welfare facilities, the potential health hazards for the different industries and service groups by occupations and materials to which the workers were exposed was recorded. The results of this study have been published in U. S. Public Health Service Bulletin 216.

On the basis of this work, an industrial hygiene service for St. Louis was established in 1936, financed through the State Health Division with Title VI Social Security funds. This survey, supplemented by follow-up visits and surveys of additional plants, has served as the basis for the industrial hygiene service for the industries in that city since that time.

State-wide administration of industrial hygiene was begun in 1937 by the Section of Environmental Sanitation of the Health Division, under which it continues to function.

In February 1939 the St. Louis County Health Commissioner, upon the recommendation of the State Health Division, added to his staff a full time engineer for industrial hygiene service in the County. A survey of the industries in St. Louis County was completed in cooperation with personnel from the Central Office.

Subsequently, the industrial hygiene services have been expanded to include a full time program in the City Health Department in Kansas City, to serve the Kansas City metropolitan area, including Jackson and Clay counties, and St. Joseph.

Three laboratories, one in each of the St. Louis

and Kansas City Health Departments, and one in the Central Office at Jefferson City have been equipped with apparatus for the detection and determination of dusts, fumes, vapors, gases and mists, and the service is available upon request without charge.

The present objectives, organizations and practice of industrial hygiene, particularly by official agencies, has attained at the state level a fairly uniform pattern throughout the nation. This to a large degree has been accomplished through the aggressive leadership at the federal level from the Division of Industrial Hygiene, Bureau of States Service, U. S. Public Health Service. Broadly, the objective of the national and state industrial hygiene program is to maintain and improve the physical and mental well-being of the workers. In accepting this concept concerning industrial hygiene, the elements of a good industrial hygiene program should provide three main objectives: (1) a safe and healthful working environment; (2) a healthful community environment; and (3) healthy, well adjusted men and women engaged in industrial production. To accomplish these purposes, four types of service are needed. First, the provision of a safe and healthful working environment is necessary. This involves careful engineering study and survey in industry of actual and potential hazards to determine the dangers from poisonous dusts, gases and fumes. Operation of processes, materials and methods of ventilation may have to be changed to safeguard workers. General plant sanitation is also of equal importance. Second, the provision by industry of medical and nursing services and satisfactorily equipped dispensary are needed. First aid treatment of illnesses and accidents was the original function of industrial medical departments—a service made necessary by state workmen's compensation laws. These services in the large industries now have been expanded to include preplacement examinations for applicants. The importance of this examination is increasing, because the placement of a large number of handicapped persons requires that the worker be carefully fitted to his job. The medical departments in large industries have further broadened their scope to provide a continuous preventive program including periodic health examinations which vary in frequency and type according to the requirements of the job. In small plants, in which a full time medical service is not feasible, part time services may be obtained from private practitioners of medicine, and an industrial nurse may be employed full time. To supplement the medical service, large industries are also employing dentists to give emergency treatment and regular dental examinations. In the majority of industrial medical services, patients are referred to private physicians and dentists for complete treatment when the illness is not related to the job. A health education program organized cooperatively by the medical and personnel departments in cooperation with the employees is another feature of a complete plant program. Third, the provision by industry of feeding facilities assuring adequate diet or at least educational efforts concerning good dietary habits for the benefit of the workers is required. A fourth essential includes such welfare services as mutual benefit plans, prepaid hospitalization and medical insurance plans and other methods for the purchase of medical service by workers and their families. To this may be added counselling service to help with individual problems, organized recreation and other activities that contribute to better morale and more healthful living.

To attain these objectives there have been developed, as already pointed out, official organizations at the federal, state and local level. The U. S. Public Health Service has directed its effort to organizing in every state health department an experienced, well qualified industrial hygiene service. This has involved recruiting and training of doctors, engineers, nurses and laboratory personnel. In addition, the service has developed procedures for surveys of industrial plants, record keeping of industrial hygiene activities, absenteeism reporting and a large selection of educational material designed specifically for industrial use. Probably most important, the service has made available to the states expert technical and administrative advice on practically any phase of industrial hygiene and is developing a constructive program for evaluating the effectiveness of state services.

The Health Division of Missouri has maintained since 1937 within the Section of Environmental Sanitation, an Industrial Hygiene Service. This service is planned to consist of a medical chief trained in industrial hygiene, two industrial hygiene engineers, two industrial hygiene nurses, and laboratory personnel. With some difficulty, particularly during the war years, this organization has been maintained with the exception of a permanent medical head. A well equipped laboratory is maintained at Jefferson City capable of undertaking any but the most exceptional and specialized industrial analyses. The state appropriates only $7,500 per year for maintaining this service so obviously it would have been impossible without federal Social Security Title VI funds. This fiscal year, $25,000 from federal sources plus the state appropriation of $7,500—making a total of $32,500—was available for the Central Office and financial aid to local services.

In developing industrial hygiene services in Missouri, the Division of Health has based its approach on the premise that corrective measures in industry for the protection of the health of workers should be accomplished by private effort and by private funds. The important task of the official agency has been to assist industry by means of technical guidance and advice to evaluate and solve its own problems. The Division of Health has

only general health laws as a legal basis for undertaking industrial hygiene; however, the Labor Department and Mine Inspection Bureaus, each with more specific laws, have depended largely on this Division for industrial hygiene service.

It seems obvious that in a state as large as Missouri with approximately five thousand industries, very insignificant results could be expected from the organization outlined, operating only at the state level and located in Jefferson City. Consequently, from the very beginning of the program a major objective was to decentralize and integrate industrial hygiene activities into local health departments. In the larger industrial centers, special industrial hygiene personnel as part of the local health department are necessary, while in those areas in which industry is of minor importance, the usual local health department personnel can integrate an effective program into their general health activities. At the present time with financial aid from the state, local industrial hygiene services with specialized personnel are maintained in St. Louis City and the Kansas City metropolitan area. In most of the full time county health departments, the regular personnel are undertaking as large an industrial hygiene program as time will permit. However, large areas of the state have no full time county health services and the service at the state level must cover this area as adequately as possible.

One administrative feature of the Missouri program has been unique since the establishment of the service in 1937, and more recently has been adopted by many states; namely, the integration as completely as possible of industrial hygiene with all other health activities, particularly at the local level. It seemed apparent from the beginning that when dealing with a total health program for the worker, practically all the health services at the state and local level have definite responsibility and functions to discharge. These services may be classified into two types: (1) those concerned with personal hygiene, and (2) those dealing with environmental hygiene.

As regards personal hygiene, the following are some of the services that should be given to the industrial worker: (1) communicable disease control, including venereal diseases and tuberculosis; immunization of workers; (2) other preventable diseases; for example, cancer, heart and rheumatism; (3) rehabilitation; (4) dental hygiene; (5) nutrition; (6) mental hygiene; (7) laboratory services of all types; (8) statistical services in connection with morbidity reporting; (9) nursing services in connection with follow-up work on morbidity reporting; (10) public health education; (11) promotion of general medical programs, and (12) welfare programs.

As regards environmental hygiene, the following are some of the services that should be available: (1) control of working environment; (2) general sanitation, lunch room, toilets; (3) water supply; (4) sewage disposal; (5) industrial waste disposal; (6) cross-connection elimination; (7) sanitation of milk and food; (8) control of home and recreational environments; (9) housing, and (10) control of insect-borne diseases.

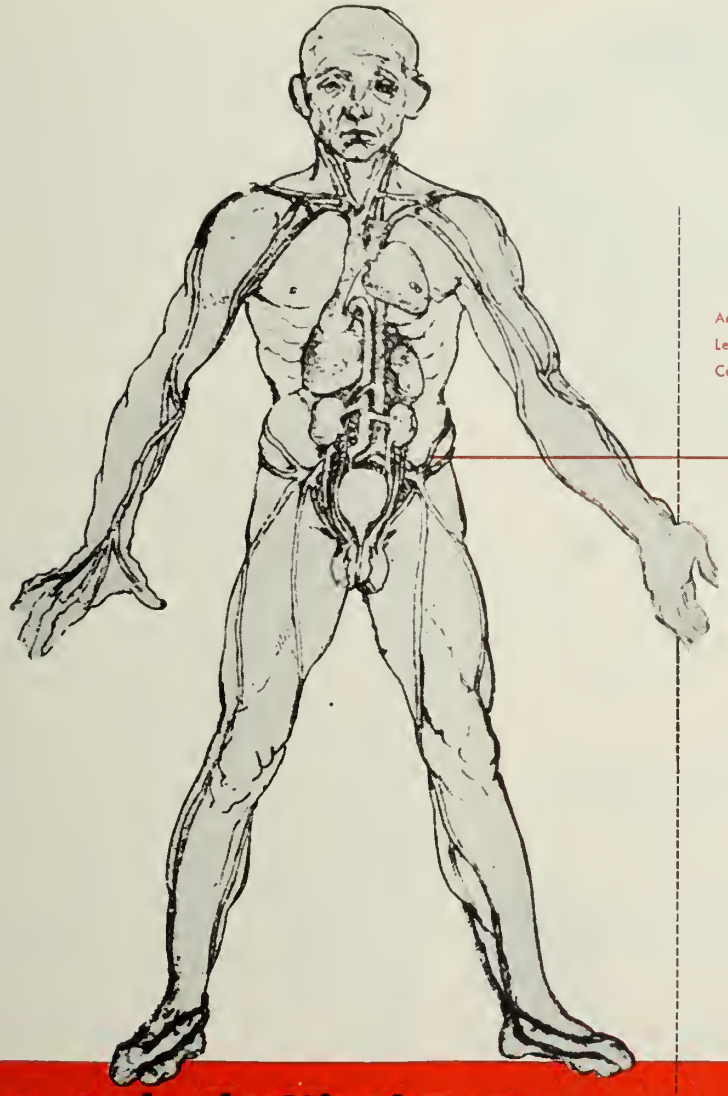
The interest of all health services at the state level was not difficult to enlist since the program presented an unusual opportunity to promote health services among the adult working group of the population which represents a most important group and one concerning which very little contact in the field of personal hygiene had been possible in the past by official agencies; for example, tuberculosis, venereal diseases and nutritionist services have become aware of the possibilities which industrial hygiene offer for mass case findings and promotion of proper nutrition habits.

Integrating industrial hygiene services into local health departments which, after all, are the only level at which such a service can maintain satisfactory contact with industry and carry on a continuous effective program, presented more difficulties for a number of reasons. First, without additional personnel the local health department already was overloaded; second, special training was essential for all professional personnel in the local department and, third, the usual resistance to new and additional activities. However, the functions of the local health department are so paramount to the success of a total public health program for the industrial worker that the efforts of the state service in this direction hold a number one priority and considerable success is being attained.

The importance of integrating industrial health with other health services in a health agency, and coordinating the activities of all agencies concerned with industrial hygiene in a community, cannot be overemphasized. In connection with the development of industrial hygiene in local areas, two factors are important. First, it is essential that the state organization have a strong industrial hygiene unit with necessary professional personnel. It is essential that the state unit be able to assume leadership and help guide the program locally. Second, it is essential that the local units coordinate their activities with the state program and depend upon the state unit making initial contact with industry at least in the earlier stages of the development of the local program.

The industrial hygiene problems in this nation are too numerous and too great for any one organization ever to hope to solve by itself. It is my opinion that industrial hygiene administrators should make every effort to place industrial health service on the same universally accepted basis that is now true of other health services.

Under this plan of organization, the following types of services and practices, previously discussed in general, have been developed under the state industrial hygiene program: (1) evaluation of the industrial environment and recommendations regarding needed correction of those condi-



Anatomic drawing by
Leonardo da Vinci—
Courtesy, The Bettmann Archive.

Leonardo da Vinci (1452-1519)

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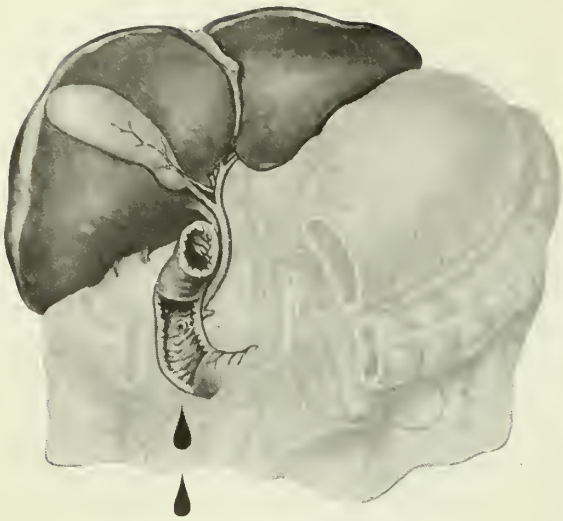
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*Albrecht, F. K.: Modern Management in Clinical Medicine, Baltimore, The Williams and Wilkins Co., 1946, p. 170.

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tions found to be detrimental to health: (2) advice to management and medical supervisors as to the relative toxicity of materials or processes, and especially new materials prior to their introduction into industry; (3) consultant services to medical supervisors, private physicians, compensation authorities and other state agencies regarding illnesses affecting workers; (4) provision of necessary laboratory services of both a chemical and physical nature; (5) promotion of more complete occupational disease reporting and assistance in developing, maintaining and analyzing absenteeism records, and health education programs, and (6) promotion of adult hygiene programs in industry.

To carry out these objectives, many methods of attack and various professional personnel are necessary; however, the main burden lies on medical, engineering, chemical and nursing personnel.

In actual practice the various professional personnel constituting an industrial hygiene unit function as a team, each one having certain services to perform. For example, the physician should stimulate industry to report all types of disability to the industrial hygiene unit so that these may be analyzed and the necessary investigations performed to prevent the recurrence of those causes of disability which result in high rates of lost time. The physician is in a position to cooperate with state and county industrial health committees of medical societies, and through such societies and individual physicians to stimulate physical examinations in industry. In addition to evaluating the present health service in a plant, the industrial hygiene physician can give consultation services to private physicians on various occupational diseases and can promote other adult health services in industry through his close contact with the other services in the health department, such as venereal disease, tuberculosis, nutrition and health education. These are but a few of the activities which an industrial hygiene physician can carry on to a definite advantage.

The engineering personnel conduct preliminary surveys for the purpose of determining existing health hazards and later follow these up with detailed studies on such problems as result from exposure to dusts, fumes, vapors, gases and other airborne toxic materials. The engineers also make studies of ventilation and illumination, evaluate noise and other physical hazards, including safety and general sanitation. By cooperating with the sanitary engineering program, the industrial hygiene engineer is in a position to give advice to industry on such matters as water supply, disposal of sewage and other industrial wastes, cross-connections, and many other problems of a general engineering nature.

The chemists in the industrial hygiene unit assist the physician and engineer in the evaluation of toxic hazards and conduct much of the analytical work involved in such studies. This also involves the development of sampling methods and analytical technics.

Of late, industrial hygiene divisions have added nursing consultants to their staffs, realizing that the nurse in an industrial establishment is the key worker, especially in the promotion of good adult hygiene. The first aims of a consultant industrial nursing program are the promotion of more nursing services in industry and a better utilization of those services now in existence. The nursing consultant can promote the formation of industrial nursing organizations which can meet to discuss industrial health problems. The consultant nurse can also advise the plant nurse in such matters as record keeping, sick absenteeism, follow-up, and in general act as a source of information on new developments to the plant nurse. There are numerous functions which a plant nurse should carry on in the interest of health and the official nursing consultant is in a position to interpret these and promote their establishment in the plant.

The accomplishments of official industrial hygiene agencies of the nation as reported[5] for the two year period ending July 1, 1944, included 41,975 different services to 23,685 plants employing nine million workers and located in thirty-four states. This constitutes about two thirds of the workers in manufacturing industries in the country. These services were investigations, technical and consultative in nature, involving actual performance in the plant. In undertaking these services 43,000 tests of materials and substances in the laboratory and 32,000 tests and measurements in the field were made. The work included 14,536 medical examinations of workers in dusty trades and investigation of 9,017 cases of occupational diseases. Improvement in the working environment and in health and medical services were recommended in 40 per cent of the establishments serviced and for 29 per cent of the workers employed in these establishments. Compliance with recommendations was reported in more than half of the establishments in which they were made.

These accomplishments, while impressive, point out that only 18 per cent of the fifty million workers in the nation were afforded industrial hygiene service from official agencies. Although the 18 per cent represents those workers in the most hazardous industries, nevertheless, this leaves a large proportion of the nation's workers not included in a total worker's health program. To assure more complete coverage, the remaining states must develop official industrial hygiene programs and the existing services in states need reinforcing in order to attain a higher degree of decentralization and more complete and effective coverage of the employed workers.

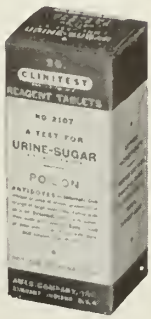
Unfortunately, practically no progress can be reported in occupational disease reporting. This constitutes a serious handicap to official agencies in delineating the problem and measuring the results of the service.

In Missouri during the two year period, 1944 and 1945, there were accomplished surveys in 1,068 plants employing 920,000 workers. As a re-

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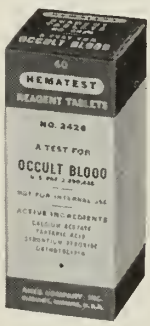
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sult of these surveys, 3,450 recommendations were made for improvements in these plants to secure better health protection of the workers. Although recheck of all plants was not possible, 1,041 of the recommendation were carried out affecting 222,891 workers. In undertaking these services 1,603 tests were made of materials and substances in the laboratory and 4,380 tests and measurements were made in the field.

Efforts to improve reporting of occupational diseases have been continued; however, with discouraging results. A quarterly bulletin dealing with a wide range of industrial hygiene subjects is prepared by the service and mailed to more than 7,000 industrial managers, industrial physicians and nurses and others interested in industrial health activities.

In closing this discussion of the national and state program for industrial health, it seems appropriate to stress the vital importance and essential role of the medical profession. Only a few of the larger industries are able to employ the full time service of medical personnel specializing in industrial hygiene, which is admittedly the ideal. The great majority, representing 95 per cent of industrial plants and 62.2 per cent of the industrial employed, must depend on part time services of private practicing physicians to advise and prescribe for the industrial hygiene problems as well as accident cases. Industry and all others concerned must appreciate that the health protection of adult workers is not effectively attained without adequate well qualified industrial medical attention. Consequently, the private practitioner has a serious responsibility and excellent opportunities in the field of industrial hygiene and there should be the closest possible cooperation between the medical profession and the official industrial hygiene agency.

Quoting from a report[6] of the Council on Industrial Health of the American Medical Association: "Employers are impelled to establish some form of preemployment physical examination as a protective device in relation to compensation legislation. If definite hazards exist, insurance carriers will see to it that such examinations are complied with before assuming the risk. The larger employer with enough workmen to justify full or part time medical service has already in many instances instituted a physical examination program. The principal demand, if it comes, will arise from managers of small plants who are likely to turn first to individual practitioners who have handled traumatic cases. The National Association of Manufacturers has recognized that the problem exists and has created a special committee with Dr. Victor Heiser as principal medical consultant to sell industrial health supervision to these smaller concerns. This campaign will be successful to the degree that it is possible to demonstrate the dollars and cents value of reducing absenteeism from injury and disease by adoption of an industrial health program including physical examination. If preventive medicine on an expanding scale in this field is considered visionary, the example of the pediatricians is pointed out as typifying exactly what can occur when control of diseases is accepted as a function of the practitioner as well as straight curative medicine."

Again the Council on Industrial Health of the American Medical Association[6] has effectively summarized the situation as follows: "This Industrial Health Bulletin has for its principal intention to bring forcibly to the minds of all members of committees on industrial health of the state medical associations that they are confronted with big and vital medical issues. When one considers the scope of the problem, the population involved, the number of existing agencies which are struggling towards a solution of industrial health, it can be safely said that medical statesmanship of no mean degree is urgently required.

"There is room for constructive effort by all interested groups. Medicine's contribution is of fundamental importance. What needs to be envisaged is a health conservation program for industry conceived and controlled by organized medicine and public health administration neither of whom can assume the entire burden alone. When that happy consummation arrives containing within it full recognition of the interests of all who give or benefit by such service, then will there be small cause for complaint that the health of the individual working man is not adequately safeguarded."

Division of Health

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BOOK REVIEW

Headache. By Louis G. Moench, M.D., Assistant Clinical Professor of Medicine, University of Utah School of Medicine; Internist, Salt Lake Clinic, Salt Lake City. Chicago: Year Book Publishers, Inc. 1947. Price $3.50.

This monograph admirably covers the symptom of headache. Great detail is exercised in the chapter on pathologic anatomy and physiology. Seemingly no circumstances that might result in headache are neglected, and this includes the gamut of headaches from post-spinal puncture headaches to emotional headaches. Possibly migraine is the most thoroughly discussed type of headache.

As an example of this books currentness mention of the treatment of migraine with dihydroergotamine is made. On the other hand the author failed to discuss the supplementary oral treatment with histamine in the desensitization treatment for histamine headaches.

The generous helping of short concise and meaty case histories, the free use of charts and diagrams and the completeness of each chapter unto itself combine to make this monograph both fine for a reference and very adaptable for current reading on this subject.

W. P. B.

IMPORTANCE OF INDUSTRIAL HEALTH TO THE NATION

MR. HOWARD STRONG, *Washington, D. C.*

EVERY INDUSTRIAL plant which uses machines, provides a man or a staff of men whose job it is to lubricate, repair, adjust and tune-up those machines so that they may operate at the highest peak of efficiency. That is only good business and every plant manager will say that it is a sound and essential investment. Is it not an equally sound investment to provide a man, or a staff to lubricate, repair, adjust and tune-up the human machines upon whose fitness depends the operation of the steel machines? Burned out bearings and stripped gears will disable any machine and, so, too, will "burned out bearings and stripped gears" disable the human machine.

No one can estimate the dollar loss to the nation which accrues from worker illness. Statistics indicate that sickness causes an annual worker absenteeism of about 500,000,000 man days and a direct cost of about $5,000,000,000. This does not take into consideration the intangible costs to the worker, or the indirect loss to the plant, including the idle machine or the substitution of another worker, the occasional disruption of the production line and, in the case of prolonged illness or death, the loss of investment in the training and experience of the worker and the cost of training a new worker, which frequently amounts to several hundred dollars. Compensation premiums and lowered morale, too, must be considered.

It is usually estimated, also, that there is an equal monetary loss in lowered efficiency of the worker who stays on the job but whose production is substandard because of some mental or physical disturbance—the man or woman who is a "fractional worker." Of course, some of the illness, causing absence or inefficiency, is inevitable, but experience has shown that a considerable proportion of it can be prevented.

The industrial manager is more and more recognizing his responsibility for the health, welfare and happiness of the men and women whose working life is largely under his control. That is a moral duty which is being accepted gradually in industry. But apart from that responsibility, management is fast realizing that maintenance of employee health and, thus, of the highest degree of efficiency, means increased production for the plant and more dollars in the company's treasury and in the pay envelope.

The validity of this statement is certified by the fact that everyone of the largest industries—the great corporations—provides health service for its employes. General Motors, for instance, has a health staff of almost 1,000 physicians, nurses and technicians. Earl Shreve, the Vice President of the General Electric Company, recently said to me, "For many years we have provided extensive medical service for our employes. We consider it one of the best investments we have ever made and it pays handsome dividends every year." Andrew Fletcher, Vice President of the St. Joseph Lead Company, says, "Money invested in improved worker conditions is worthwhile from a dollar and cents angle as well as from the human welfare point of view." The Army, during the war, provided a complete health service for employes in every one of the plants which it operated, certainly not from any altruistic motive, but because such service increased productive efficiency and helped get on with the war. Thousands of other larger plants are providing such a service because it is good business and means increased production.

But there is an arid no-man's land in the field of industrial health and here lies the great problem. Ninety per cent of the plants of the United States have less than 500 employes and 70 per cent of industrial workers are in plants employing less than 500. A negligible number of these plants have anything that can be called health service. True, manager usually has a doctor's telephone number, which he calls in case of accidents or serious injury, but this certainly does not constitute a health program. Few of these small plant managers have any appreciation of the practical value or of the possibility of an adequate service in their plants.

If the health of the nation's industrial workers is to be maintained and if material production is to reach its peak of efficiency, an adequate machinery for reaching these millions of small plant workers must be built. This must be a device which supplies not merely emergency service, but which will control environment—the housekeeping of the plant—and its potential occupational hazards. It will supply adequate preplacement and periodic physical examinations which will discover incipient and potentially serious conditions and which will serve in placing the worker in the job for which he is mentally and physically fit. Above all, such a plan must stimulate and guide the worker in habits of healthful living and it must be directed toward the prevention or elimination of conditions, both in the environment and in the worker, which lead to disability or lowered efficiency. As in the large plant, the physician must be an integral part of the plant operation. He must have an intimate knowledge of plant environment and processes, and must establish relations of mutual confidence with workers. He cannot operate successfully by remote control.

This is a large order for a small plant, but a number of pilot plans are scattered over the country which seem to be charting a successful course toward this objective. While no small plant by itself can afford such a service, several can combine in maintaining a physician and nurses and, through this cooperation, can secure a service commensurate with that of the large corporation.

Take, for instance, the plan developed in Hart-

Presented at the 89th Annual Session of the Missouri State Medical Association, March 30-April 2, 1947, Kansas City.

ford by Dr. R. F. Buchan. Six plants have an employee population of 3,000, and this is probably the maximum number which one physician can serve effectively in such a plan. A physician and eight nurses constitute the health staff for this combination. A nurse is stationed at each plant, with two nurses in each of the two larger ones. Each plant is visited one or more times a week by the physician, who has made himself intimately familiar with every plant, its housekeeping facilities and its hazards. The service provides supervision of the working environment. preemployment and periodic physical examinations, diagnosis and treatment of occupational diseases, supervision of traumatic cases with referral to recognized specialists, and counsel on the medical aspects of job placement. It includes consultation for nonoccupational complaints with referral to the family physician or a specialist, control of communicable diseases including routine blood serology and chest roentgen-rays, and absentee supervision with personal consultation for employes on returning to work from an illness. Advice and assistance on health habits and a program of health education are important factors in the plan. Each plant maintains a dispensary with necessary equipment and supplies. Here is a practicable, comprehensive program which is really working.

This demonstration, and a good many others which are in successful operation, which certain variations, about the country, have gone far enough to indicate the practicability and the value of adequate health service through group planning and operation.

But the real task is that of convincing the small employer of the dollar value and the feasibility of such a service. Local health councils, community organizations and health committees of local chambers of commerce can be of service in this sales process. Several such committees have undertaken the task and have produced outstanding results. The chambers of commerce of Philadelphia and of Los Angeles are excellent examples. In cooperation with the county medical societies, they are conducting intensive campaigns among local industries with substantial results. The Williamsport, Pa., Industries Association has secured health service, some of it on a cooperative basis, for about 15,000 of the 17,000 industrial employees of the city and county.

The Health Advisory Council of the U. S. Chamber of Commerce, will, I believe, continue to stimulate the interest of its local member organizations in industrial health. State and county medical societies, through the appointment of industrial health committees, if such committees do not already exist, should give serious consideration to the promotion of cooperative projects for small plants.

The responsibility for operation and financing of the industrial health program varies widely. Most frequently the service is paid for by management as a legitimate expense and a sound investment, though sometimes the employes share in the cost. In an increasing number of plants the union operates and pays for the service. Health service also is growing as an item for collective bargaining and many contracts between management and the union stipulate such a service. Any of these methods is usually feasible in a cooperative plan.

Though many industrialists, and some physicians, will not agree, I am convinced that an industrial health program can best be worked out with the participation of both management and labor. Its success depends on the friendly acceptance of both groups. The imposition of a program from above, without the understanding and cooperation of employes, is likely to be doomed to failure. The promotion of health is not a process which can be done to people, it must be done with them. I believe that such a basis of operation will produce the most satisfactory results for both groups.

There is one other phase of industrial health which too often is overlooked by industrial physicians. Conditions in the plant may be ideal and the preventive procedure may be operating successfully, and still one may find a comparatively small reduction in absenteeism caused by illness. This is because about 90 per cent of illness which causes absenteeism arises from sources outside the plant. If, therefore, worker illness is to be cut down materially, the health program must reach into the home of the worker and into the community. The worker in the plant must become a contact through which the health staff will reach out to the family and ultimately to the community. The industrial physician and his staff have not discharged their responsibility to the workers or to the plant management until they utilize their skills and their influence toward the improvement of the community health through every agency, official and voluntary, which seeks to bring abundant health to all of the people. Only thus can the health of the industrial workers be assured.

DERMATITIS DUE TO TEXTILE FINISHING OPERATIONS

In a textile finishing plant employing approximately 300 people, cases of dermatitis varying from the mild type of case to the most severe, had been occurring repeatedly for several years. At the request of a labor union, a survey of the plant was made in cooperation with a dermatologist from the U. S. Public Health Service. The cause, or causes, of dermatitis was found to be long continued skin contact with various materials essential to "finishing" cotton textiles. The washroom facilities for employees were found to be woefully inadequate. No hot water, soap or towels were furnished. The solution to the problem involved the following measures: (1) Provision of adequate washing facilities, with ample hot water supplied throughout the entire year and supervision to insure thorough washing by employees following work; (2) wearing of protective garments for employees on jobs where contact with irritating or sensitizing materials was excessive.

Cases of dermatitis diminished greatly in number and severity following compliance with these corrective measures.

PRESIDENT'S PAGE

THE NINETIETH Annual Session of the Missouri State Medical Association will take place in St. Louis at the Jefferson Hotel, March 14 to 17. All members are urged to attend this outstanding event.

The program has been arranged for the benefit of the general practitioner. Suggestions for topics were sent in by physicians from all over the state. As a result, the Program Committee has been able to design the type of program you have requested.



Certainly the subjects for the three symposia, "Obstetrics," "Pediatrics" and "The Acute Abdomen" should prove interesting and worth while to most physicians. The two mixed sessions likewise will afford a real opportunity to gain knowledge of the latest treatments in many common ailments. Outstanding guest speakers from all over the country as well as Missouri physicians will discuss these important subjects.

Edward L. Bortz, M.D., President of the American Medical Association, will be the guest speaker at the Annual Banquet. His subject, "Medicine's New Frontiers," is especially interesting.

We should all take advantage of this opportunity to advance our knowledge and to renew old friendships.

Morris B. Simpson,

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FEBRUARY, 1948

EDITORIALS

THE DOCTOR IS OUT OF TOWN

Is that sign ready "The Doctor Will Be Out of Town From March 14 to March 17"? And a prominent place selected for it?

The Annual Session will open on Sunday, March 14, with the House of Delegates. On that evening, presidents and secretaries of county medical societies will hold a dinner meeting. On the following morning the scientific session will begin. The schedule of the session and the program appear on page 115 of this issue. Also, by using page 117 hotel reservation can be made so that choice accommodation will be assured.

The program, the scientific exhibits and commercial exhibits all promise to be unusually valuable and a large attendance is expected so that the meeting of friends will add to the pleasure of the session.

AMERICAN MEDICAL ASSOCIATION

The Interim Session of the American Medical Association took place in Cleveland, January 5 and 6, with a meeting of the House of Delegates. This was followed on January 7 and 8 with a scientific session, especially designed for the general practitioner. Carl V. Moore, M.D., St. Louis, appeared on the program and spoke on "Recent Advances in Hematology."

The meeting was highlighted by the presentation of the General Practitioner's Award to Archer C. Sudan, M.D., Kremmling, Colorado. This award will be presented annually at the Interim Session.

The next Interim Session will be held in St. Louis in December 1948.

"YOU'LL BE SORRY"*

From the above-quoted doleful and lugubrious warning, a certain radio show derives its popular gag line. After reading "State Labor and Industrial Inspection Laws"—which contain the Missouri statutes covering industrial health—one feels that, from a physician's standpoint, this title is portentously appropriate.

How many physicians know, for instance, what substances the Missouri law regards as "dangerous to health"? Or, what duties or precautions the industrial physician is legally obliged to fulfill regarding such "articles"? Or, the penalties he may receive, if he ignores the statutes?

The answers are so generally unknown and the ignorance of such laws is so widespread as to warrant calling attention to their existence throughout the State Medical Association membership.

Almost all physicians avoid, if possible, reading long, legal phraseology. But, almost every practitioner in the State of Missouri is involved—daily or less often—in the three short paragraphs quoted:

"Section 10212. Articles considered dangerous to health.—The carrying on of any process, or manufacture, or labor in this state in which antimony, arsenic, brass, copper, lead, mercury, phosphorus, zinc, their alloys or salts or any poisonous chemicals, minerals, acids, fumes, vapors, gases, or other substances, are generated or used, employed or handled by the employees in harmful quantities, or under harmful conditions, or come in contact with in a harmful way, are hereby declared to be especially dangerous to the health of the employees."

From this it would seem that the author "threw the book" at his subject. One might conclude that almost any manufacturing process is "dangerous" from the all inclusive list of "articles" quoted. But since sawdust is not mentioned, the "Missouri Meerschaum" industry and raising mules would seem safe, although the latter occupation is fraught with traumatic probables, well known to all who have been so employed.

The industrial health supervisory or medical duties which apply to these manufacturing processes follows:

"Section 10214. Employees to be examined monthly by physician.—Every employer engaged in carrying on any process or manufacture referred to in Section 10212 shall, as often as once every calendar month, cause all employees who come into direct contact with the poisonous agencies or injurious processes referred to in Section 10212, to be examined by a competent licensed and reputable physician for the purpose of ascertaining if there exists in any employee any industrial or occupational disease or illness or any disease or illness due or incident to the character of the work in which the employee is engaged."

This provision is not generally carried out, as would be expected. Yet, following is the real portion which prompted this editorial. Here is the part of the law which every physician in Missouri should thoroughly understand!

"Section 10215. Physician to make report to state board of health—penalty for failure.—It is hereby made the duty of any licensed physician who shall make a physical examination of any employee under the provisions of Section 10214, to make within twenty-four hours a triplicate report thereof to the state board of health of the state of Missouri upon blanks to be furnished by said board upon request, and if any such disease or illness is found, the physician shall so report, and if any such disease is found, the report shall

*Prepared by Vincent T. Williams, M.D., Chairman, Committee on Industrial Health.

state the name and address and business of such employer and the nature of the disease in precise and definite terms of all the diseases or illness with which the employee is afflicted and the probable extent and duration thereof, the name and business of employer, and the last place and length of employment. Provided, that the failure of any such physician to receive blanks from the state board of health for making such a report shall not excuse the physician from making the report as herein required. Any physician who shall fail to make a report as required by this section shall be deemed guilty of a misdemeanor and upon conviction shall be fined not less than fifty dollars ($50.00), and in each case shall stand committed until such fine and costs are paid unless otherwise discharged by due process of law."

No physician can possibly know every statute or law. Even the lawyers do not profess such omniscience. Nevertheless, every child is taught that ignorance of the law is no excuse. Therefore, attention is called to these three statutes, which especially apply to industrial health. This is done with the hope that more respect will be given to the duties (and the penalties for violations) of industrial physicians, whether occasionally or regularly consulted in this field. Otherwise, as the voice on the radio program says, "You'll be sorry."

PAUL R. HAWLEY, M.D., TO HEAD BLUE SHIELD AND BLUE CROSS COMMISSIONS

Paul R. Hawley, M.D., who organized and developed the medical hospital program of the Veterans Administration and headed the medical work in the European Theater of Operations during World War II, has been named chief executive officer of the national organization of nonprofit Blue Cross hospital service plans and Blue Shield, formerly known as Associated Medical Care Plans. Missouri Medical Service, St. Louis, and Surgical Care, Kansas City, are members of Blue Shield.

The announcement of Dr. Hawley's appointment was made at a dinner in his honor in Boston on January 10. Dr. Hawley will assume his new duties on April 1. He resigned as Chief Medical Director of the Veterans Administration on December 31 and will terminate his services as special assistant to the Administrator of Veterans Affairs and as chairman of the Committee on Unification of the Medical Services of the Armed Forces in late March.

In accepting the appointment Dr. Hawley, in part, said:

"I have accepted this position solely because it offers an exceptional opportunity to contribute to the improvement of the medical care of our people. From a financial point of view it is far from being the most attractive position offered me since my resignation from the Veterans Administration.

"I am not at all sure that I can measure up to this challenge. But what I lack in ability I shall try earnestly to make up in enthusiasm and devotion to this task.

"I have been told by so-called experts that privately operated prepaid health service can never be successful in this country—that the costs of the 'fee for service' type of operations are prohibitive, and that prepayment for medical care can be placed on a sound actuarial basis only through the operation of clinics staffed by salaried physicians. This I do not believe; but, if it should prove to be true, my position would be that it is the type of operation that must be changed rather than the quality of medical care offered to subscribers. I say this with confidence because the leaders of these two organizations have impressed me with their complete sincerity of purpose. They have convinced me fully that they are committed to providing a real public service. They would never have considered me for this position had I held any different views, nor would I have accepted the position upon any other conditions.

"I further have been told by so-called experts that this undertaking is too gigantic for a private, voluntary agency and that only the government is in a position to make it successful. I would have no quarrel with this point of view except that it is invariably coupled with the provision that, to make it successful, the government would have to control medical practice. Nor would I object to the government control of medicine if this would elevate the standard of medical practice in this country. But I have seen government medicine in operation in other countries, and I know what government control does to medicine. I want no part of if for our people. . . .

"Blue Cross and Blue Shield have only one objective—that of offering the best in prepaid health service at the lowest possible cost. These organizations have been operated for the benefit of the patient—not for the benefit of the doctor or the hospital. And, so long as I am in any way connected with these organizations, there will be no deviation from this fixed policy."

NEWS NOTES

James U. Scott, M.D., Harrisonville, was honored recently on his 76th birthday and the culmination of fifty-three years of practice in Cass County.

Florence E. MacInnis, M.D., Kansas City, spoke on "Tuberculosis" recently at a meeting of the Carroll County Health Council.

A memorial fund for crippled persons, honoring the late J. Archer O'Reilly, M.D., St. Louis, has been established jointly by the Missouri Society for Crippled Children and Adults, Inc., and the St. Louis Society for Crippled Children. The project will be devoted "to furtherance of the work for the handicapped to which Dr. O'Reilly devoted his life."

Ira H. Lockwood, M.D., Kansas City, has been appointed one of four directors to serve on the

board of the Radiological Society of North America.

M. B. Casebolt, M.D., Kansas City, and Theodore H. Aschmann, M.D., Kansas City, have been appointed on the Kansas City Family Life Council as representatives from the Jackson County Medical Society.

Mr. L. W. Rember, Chicago, has been appointed by the American Medical Association as assistant to Dr. Lull, in charge of public relations. The firm of Theodore R. Sills, Chicago and New York, has been retained in a consultant capacity to assist Mr. Rember.

DEATHS

Belden, William E., M.D., Columbia, a graduate of the Kentucky School of Medicine, 1893; honor member and former president of the Boone County Medical Society; retired; aged 78; died November 8.

Schoen, Ernst R., M.D., Jackson, a graduate of the Homeopathic Medical College of Missouri, 1895; member of the Cape Girardeau County Medical Society; aged 74; died November 23.

Lower, Mary Jeannette, M.D., Kansas City, a graduate of the Southwest School of Medicine, 1916; Fellow of the American Medical Association; honor member of the Jackson County Medical Society; aged 80; died November 28.

McGurk, Thomas Edward, M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1925; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 45; died December 1.

Neff, Frank C., M.D., Kansas City, a graduate of the University Medical College of Kansas City, 1897; Affiliate Fellow of the American Medical Association; honor member and past president of the Jackson County Medical Society; aged 75; died December 3.

O'Reilly, James Archer, M.D., St. Louis, a graduate of Harvard Medical School, 1906; Fellow of the American Medical Association; member of the St. Louis Medical Society; president for twenty years of the Missouri Society for Crippled Children and Adults; aged 68; died December 5.

Jackson, Douglas A., M.D., Kansas City, a graduate of the University of Louisville School of Medicine, 1934; member of the Jackson County Medical Society; aged 39; died December 7.

MUSINGS OF THE FIELD SECRETARY

The second National Conference of County Medical Society Officers was held on January 6 in Cleveland, Ohio, during the interim meeting of the American Medical Association. The entire program was centered on the general practitioner.

Some of the questions and subjects discussed were:

How to create more of him for the future need of the country.

How to uphold his prestige.

His responsibility in community leadership.

What is being done to sell medical students and



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young M.D.'s on general practice?

Where can a medical student and a young M.D. get specific training for general practice?

Are general practitioners teaching in medical schools and hospitals?

Are specialty boards lowering the prestige of the general practitioner?

By virtue of their special knowledge should not physicians assume community leadership on public health matters?

These questions along with others were discussed by a good number of physicians attending the conference. The gist of some of the statements made during the discussion was:

Medical students are under the influence of specialists throughout their training period.

Many physicians are depending too much on mechanical aids for diagnoses and do not think enough for themselves.

An average student cannot get in medical school today.

Relations between general practitioners and specialists, on the whole, are not as good as they once were and need improvement.

The pseudo prosperity, during and following World War II, has influenced more specialization.

Qualified general practitioners should not be excluded from hospital staffs.

Some prepaid medical service plans lower the prestige of general practitioners because many general practitioners cannot get their patients into hospitals, both from lack of hospital facilities and exclusion from some staffs.

A few large hospitals have included a general practitioner section in the hospital staff.

The public is demanding more general practitioners.

Attending postgraduate courses, as well as more professional reading, should help to develop more prestige for the general practitioner.

The greatest potential mouthpiece in America today is the general practitioner.

There are not enough physicians in Congress.

More health education should be given by practicing physicians.

Physicians are expected to give the public more benefit of their special knowledge in matters which affect the public's health.

One county society representative reported that his society made it a policy to see that the society was represented in various community organizations and groups.

One of the many silver haired physicians present stated that he had been secretary of his county society for forty-five years. The only reason he could figure for it was that he always paid the postage for society correspondence and did not charge it to the society.

ORGANIZATION ACTIVITIES

MISSOURI STATE MEDICAL ASSOCIATION

90TH ANNUAL SESSION, JEFFERSON HOTEL, ST. LOUIS

The Ninetieth Annual Session of the Association convenes at the Jefferson Hotel, St. Louis, Sunday, Monday, Tuesday and Wednesday, March 14, 15, 16, 17, 1948.

TIME AND PLACE OF MEETINGS

Sunday, March 14

2:00 p. m. House of Delegates. Jefferson Hotel.
6:00 p. m. Dinner for Presidents and Secretaries of County Medical Societies. Jefferson Hotel.

Monday, March 15

9:30 a. m. Scientific Session. Gold Room, Jefferson Hotel.
1:30 p. m. Scientific Session. Gold Room, Jefferson Hotel.
4:30 p. m. House of Delegates. Jefferson Hotel.
7:30 p. m. Annual Banquet in Honor of Past Presidents. Gold Room, Jefferson Hotel.

Tuesday, March 16

9:00 a.m. Scientific Session. Gold Room, Jefferson Hotel.
2:00 p. m. Scientific Session. Gold Room, Jefferson Hotel.

Wednesday, March 17

9:30 a. m. Scientific Session. Gold Room, Jefferson Hotel.
2:00 p. m. House of Delegates. Gold Room, Jefferson Hotel.

SCIENTIFIC PROGRAM OF GENERAL MEETINGS

Monday, March 15, 1948, 9:30 a. m.—Gold Room, Jefferson Hotel

9:30 a. m. The Overtreatment of Eclampsia, William F. Mengert, M.D., Dallas, Texas.
10:00 a. m. Avoidable and Unavoidable Hemorrhage in Obstetrics, Hugh G. Hamilton, M.D., Kansas City.
10:20 a. m. Discussion:
Howard B. Goodrich, M.D., Hannibal.
Joseph L. Johnston, M.D., Springfield.

10:30 a. m. View of Exhibits.
11:00 a. m. Induction of Labor, Ora James Gibson, M.D., Cape Girardeau.
11:20 a. m. Discussion:
John M. Singleton, M.D., Kansas City.
Leo J. Hartnett, M.D., St. Louis.
11:30 a. m. The Rh Factor, Matthew W. Weis, M.D., St. Louis.
11:50 a. m. Discussion:
Peter G. Danis, M.D., St. Louis.
Hollis Allen, M.D., St. Louis.

Monday, March 15, 1948, 1:30 p. m.—Gold Room, Jefferson Hotel

1:30 p. m. Common Fractures, E. C. Funsch, M.D., St. Louis.
1:50 p. m. Discussion.
1:55 p. m. The Diagnosis of Tuberculosis in Rural Areas, Lewis S. Jordan, M.D., Granite Falls, Minn.
2:25 p. m. Discussion.
2:30 p. m. Coronary Heart Disease, A. M. Estes, M.D., Jackson, Mo.
2:50 p. m. Discussion.
2:55 p. m. Headache, Bayard T. Horton, M.D., Rochester, Minn.
3:25 p. m. Discussion.
3:30 p. m. Allergy Problems, Herbert J. Rinkel, M.D., Kansas City.
3:55 p. m. Discussion.
4:00 p. m. View of Exhibits.
4:30 p. m. House of Delegates.

BANQUET IN HONOR OF PAST PRESIDENTS

Monday, March 15, 1948, 7:00 p. m.—Gold Room, Jefferson Hotel

Tendered by Officers of the Association, Presidents and Secretaries of County Medical Societies, Members of the House of Delegates, Members of the Association and Their Guests to Past Presidents of the Association.

Medicine's New Frontiers, Edward L. Bortz, M.D., Philadelphia, President, American Medical Association.

Tuesday, March 16, 1948, 9:00 a. m.—Gold Room, Jefferson Hotel

9:00 a. m. Office Gynecology, Joseph A. Hardy, M.D., St. Louis.
9:20 a. m. Discussion.
9:25 a. m. Common Proctologic Conditions, Thomas E. Smith, M.D., Dallas, Texas.
9:55 a. m. Discussion.
10:00 a. m. Hypertension, H. O. Loyd, M.D., Jefferson City, Mo.
10:20 a. m. Discussion.
10:25 a. m. View of Exhibits.
10:55 a. m. Sprains and Strains: Differential Diagnosis, F. G. Pipkin, M.D., Kansas City.
11:15. a. m. Discussion.
11:20 a. m. Treatment of Diabetes, Henry T. Ricketts, M.D., Chicago.
11:50 a. m. Discussion.

Tuesday, March 16, 1948, 2:00 p. m.—Gold Room, Jefferson Hotel

Symposium on Pediatrics

2:00 p. m. Garrett Hogg, M.D., Cabool, Moderator.
Panel:
H. E. Petersen, M.D., St. Joseph.
Caldwell K. Hamilton, M.D., St. Louis.
C. T. Herbert, M.D., Cape Girardeau.
3:15 p. m. View of Exhibits.
3:45 p. m. William J. Shaw, M.D., Fayette, Moderator.
Panel:
George V. Herrman, M.D., Kansas City.
Joseph C. Jaudon, M.D., St. Louis.
D. B. Landau, M.D., Hannibal.
5:00 p. m. Adjournment.

Wednesday, March 17, 1948, 9:30 a. m.—Gold Room, Jefferson Hotel

The Acute Abdomen

9:30 a. m. Signs and Symptoms of the Acute Abdomen, Charles G. Johnston, M.D., Detroit.
10:00 a. m. Medical Aspects, Alphonse McMahon, M.D., St. Louis.
10:20 a. m. View of Exhibits.
10:50 a. m. Surgical Aspects, Frank W. Hall, M.D., Cape Girardeau.
11:10 a. m. Obstetric and Gynecologic Aspects, Kenneth E. Cox, M.D., Kansas City.
11:30 a. m. Supportive Procedures, Charles H. Johnston, M.D., Detroit.
11:45 a. m. Discussion.

HOTEL RESERVATIONS
for the
ANNUAL SESSION

Jefferson Hotel, St. Louis March 14, 15, 16, 17, 1948

Hotel reservations for the Annual Session should be made direct to the hotel of choice. Early reservations will insure obtaining the reservation desired. The application following may be used in place of a letter to the hotel. Following are some of the hotels with rates.

		Two persons		*2-Room Suites*
	One person	*Double bed*	*Twin beds*	
Jefferson, 415 N. 12th	$3.50-$6.00	$5.00-$7.00	$7.00-$8.00	$14.00-$22.00
Coronado, 3701 Lindell	3.50- 6.00	5.25-10.00	5.50-11.00	8.50- 15.00
DeSoto, 1014 Locust	2.75- 7.00	4.00- 7.00	6.00-12.00	10.50- 12.00
Lennox, 825 Washington	3.25- 6.00	5.00- 6.50	6.00- 8.00	11.00
Majestic, 200 N. 11th	2.25- 3.50	3.00- 4.00	5.00	
Mark Twain, 116 N. 8th	3.00- 3.50	4.50- 5.00	5.00- 5.50	
Mayfair, 806 St. Charles	3.25- 7.00	5.00- 8.00	6.00- 8.00	11.00-up
Melbourne, 3601 Lindell	3.50- 6.00	5.50- 6.50	6.00- 8.50	12.00- 15.50
Statler, 822 Washington	3.50- 6.00	5.25- 8.00	7.25-10.00	16.00- 19.00

Hotel:

Please reserve the following accommodations for the Annual Session of the Missouri State Medical Association, March 14-17, 1948.

Single Room ..... Double Room ..... Twin Bedded Room .....

2 Room Suite .....

Rate: From $..... to $.....

Arriving at Hotel (date) ..... (hour) ..... a. m. ..... p. m.

Leaving (date) ..... (hour) ..... a. m. ..... p. m.

Names and addresses of all persons for whom you are requestiong reservations and who will occupy the rooms asked for:

.....

.....

.....

Individual Requesting Reservations:

Name .....

Address .....

City and State .....

COMMERCIAL EXHIBITS

Jefferson Hotel

Abbott Laboratories, North Chicago. Booth 1.
Wm. S. Merrell Company, Cincinnati. Booth 2.
Schering Corporation, Bloomfield, N. J. Booth 3.
V. Mueller & Company, Chicago. Booth 4.
Mead Johnson & Company. Booths 5 and 6.
C. V. Mosby Company, St. Louis. Booth 7.
A. S. Aloe Company, St. Louis. Booth 8.
Carnation Company, Oconomowoc, Wis. Booth 9.
C. W. Alban & Company, St. Louis. Booth 10.
W. B. Saunders Company, Philadelphia. Booth 11.
Spencer, Inc., New Haven, Conn. Booth 12.
Parke, Davis & Company, Detroit. Booth 13.
Pevely Dairy Company, St. Louis. Booth 14.
E. R. Squibb & Sons, New York. Booth 15.
Burroughs Wellcome & Co., New York. Booth 16.
Nutrition Research Laboratories, Chicago. Booth 17.
Medical Protective Company, Fort Wayne. Booth 18.
Mr. C. E. Hovey, Broker, St. Louis. Booth 19.
St. Louis District Dairy Council, St. Louis. Booth 20.
United Medical Equipment Co., Kansas City. Booth 21.
Farnsworth Laboratories, Chicago. Booth 22.
Philip Morris & Co., New York. Booth 23.
C. B. Fleet Company, Lynchburg, Va. Booth 24.
Cameron Surgical Specialty Co., Chicago. Booth 26.
U. S. Vitamin Corporation, New York. Booth 27.
Wm. P. Poythress & Co., Richmond, Va. Booth 28.
Camel Cigarettes, New York. Booths 29 and 30.
Ciba Pharmaceutical Products, Summit, N. J. Booth 31.
The Borden Company, New York. Booth 32.
Smith, Kline & French Laboratories, Philadelphia. Booth 33.
Eli Lilly & Company, Indianapolis. Booth 34.
Doho Chemical Corporation, New York. Booth 35.
Hygeia Nursing Bottle Company, Buffalo. Booth 37.
Winthrop-Stearns, Inc., New York. Booth 38.
Eaton Laboratories, Norwich. Booths 39 and 40.
White Laboratories, Newark, N. J. Booth 41.
F. A. Davis Publishing Co., Philadelphia. Booth 42.
Hoffman LaRoche, Inc., Nutley, N. J. Booth 44.
Lederle Laboratories, New York. Booth 45.
Ames Company, Elkhart, Ind. Booth 46.
Sharp & Dohme, Philadelphia. Booth 47.
Dumas-Wilson & Company, St. Louis. Booth 48.
Coca-Cola Company, Atlanta. Booths 49 and 50.
Holland Rantos Company, New York. Booth 51.
Dick X-Ray Company, St. Louis. Booth 52.
Bilhuber-Knoll Corporation, Orange, N. J. Booth 53.
Lanteen Medical Laboratories, Chicago. Booth 54.
Pet Milk Sales Corporation, St. Louis. Booth 55.
Picker X-Ray Corporation of Missouri, St. Louis. Booth 57.
Jones Metabolism Equipment Co., St. Louis. Booth 58.
Hamilton-Schmidt Surgical Co., St. Louis. Booth 61.
Clark & Clark, Wenonah, N. J. Booth 62.
Washington University School of Medicine, St. Louis. Booth 63.
Merck & Company, Inc., Rahway, N. Y. Booth 64.
G. D. Searle & Company, Chicago. Booth 65.
M & R Dietetic Laboratories, Inc., Columbus. Booth 66.

SOCIETY PROCEEDINGS

FIRST COUNCILOR DISTRICT

H. E. PETERSEN, ST. JOSEPH, COUNCILOR

Caldwell-Livingston County Medical Society

Thirty physicians from Caldwell, Carroll, Daviess, Grundy, Harrison, Linn, Livingston and Mercer counties attended a dinner meeting sponsored by the Caldwell-Livingston County Medical Society, in Chillicothe on December 12.

M. Pinson Neal, M.D., Columbia, spoke on "Diagnoses Commonly Missed in General Practice." An extended discussion followed the presentation evidencing the interest in this practical subject.

Another meeting of the group was scheduled for January 22 under sponsorship of the Grundy-Daviess County Medical Society.

JOSEPH GALE, M.D., Secretary.

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

Lewis-Clark-Scotland County Medical Society

The Lewis-Clark-Scotland County Medical Society held a dinner meeting at Canton on December 11. Those present were A. H. Lillard, M.D., LaBelle; William L. Ellery, M.D., LaGrange; L. Y. Davis, M.D., Canton; P. W. Jennings, M.D., Canton; W. F. Francka, M.D., Hannibal, and Mr. Ray McIntyre, St. Louis.

An interesting and informative round table discussion relating to county health centers and Missouri Medical Service followed the dinner.

P. W. JENNINGS, M.D., Secretary.

FOURTH COUNCILOR DISTRICT

OTTO KOCH, CLAYTON, COUNCILOR

St. Louis County Medical Society

The St. Louis County Medical Society met December 10, at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

Otto Koch, M.D., Clayton, chairman of the entertain-

COUNTY SOCIETY HONOR ROLL 1948

(Societies Which Have Paid Dues for All Members and Date Placed on Honor Roll))

Miller County Medical Society, December 2, 1947.

Camden County Medical Society, December 6, 1947.

Ste. Genevieve County Medical Society, December 10, 1947.

Mercer County Medical Society, December 11, 1947.

Moniteau County Medical Society, December 15, 1947.

Dallas, Hickory, Polk County Medical Society, December 23, 1947.

Perry County Medical Society, December 23, 1947.

Morgan County Medical Society, December 29, 1947.

Audrain County Medical Society, December 30, 1947.

Carter-Shannon County Medical Society, January 3, 1948.

Cass County Medical Society, January 6, 1948.

Laclede County Medical Society, January 9, 1948.

Medical Advertisement



From where I sit
by Joe Marsh

We All Need Fun!

Nobody in Our Town is exactly lazy (even though Pete Swanson's missus claims that he sleeps till seven A.M.). But by far the hardest working man of all is Doctor Hollister—on call, morning, noon and night.

Funny thing, Hollister's favorite prescription to his patients is: You ought to have more fun. The pace of modern living, even on the farm, demands some relaxation.

And as he says—fun is a personal thing. For the missus it may mean a movie or a good book; for Dad, a mellow and refreshing glass of beer; and for the kids, parcheesi or the radio. Doesn't mean everybody has to like the same thing—so long as they relax, have fun, together, in the home.

Doctor Hollister doesn't have much time himself. After a hard day, he'll relax before the fire with a mellow glass of beer—and wait for the phone to ring again. And from where I sit, he deserves each and every well-earned minute of that relaxation.

Joe Marsh

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ment committee, reported that the annual installation banquet would be held at the Sheraton-Coronado Hotel on January 14.

The following officers were elected: President, Martyn Schattyn, M.D.; vice president, Simon A. Levey, M.D.; secretary, Robert C. Kingsland, M.D.; councilors for three year term, Richard A. Sutter, M.D., Louis F. Howe, M.D., and Carl C. Irick, M.D.; councilor for one year term, Guy N. Magness, M.D.; delegates to the Annual Session, R. H. Hale, M.D., James R. Meador, M.D., C. P. Dyer, M.D., and Julius Jensen, M.D.; alternate delegates, Roy A. Walther, Sr., M.D., C. E. Sanders, M.D., Oscar P. Hampton, M.D., John R. Daly, M.D., and Eugene R. Brown, M.D.

James L. Mudd, M.D., St. Louis, spoke on "Recent Advances in Diagnosis and Management of Thoracic Diseases."

Martyn Schattyn, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central County Medical Society

The South Central County Medical Society met at the Antlers Cafe, Mountain Grove, on December 19, with the following members and guests present: J. R. Mott, M.D., Hartville; J. A. Fuson, M.D., Mansfield; R. A. Ryan, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, Jr., M.D., Cabool; C. F. Callihan, M.D., Willow Springs; E. C. Bohrer, M.D., and Rollin H. Smith, M.D., West Plains; Leslie Randall, M.D., Licking.

Following dinner, Dr. Mott, the president, called the meeting to order in the office of Dr. Ryan.

The following officers were elected: President, C. F. Callihan, M.D.; vice president, Garrett Hogg, Jr., M.D.; secretary-treasurer, A. C. Ames, M.D.; censor for three years, Rollin H. Smith, M.D.; delegates and alternates: Wright County: R. A. Ryan, M.D., and J. R. Mott, M.D.; Texas County, Leslie Randall, M.D., and Garrett Hogg, Jr., M.D.; Howell County, Rollin H. Smith, M.D., and C. F. Callihan, M.D.; Oregon County, C. W. Cooper, M.D., and F. A. Barnes, M.D.; Douglas County, M.C. Gentry, M.D., and R. M. Norman, M.D.

It was voted that the president at each meeting should appoint one member to provide the program for the next meeting.

Interesting case reports were reported by Drs. Callihan, Bohrer, Hogg and Smith. After discussion of Blue Cross, Community Health League and other subjects, the meeting adjourned.

A. C. Ames, M.D., Secretary.

ROSTER OF MEMBERS BY COUNTY SOCIETY

ANDREW COUNTY MEDICAL SOCIETY

Holliday, Morgan Lee....Fillmore
Kelley, Gilbert B. ....Savannah
Kelley, Ralph R. ....Savannah
Long, Forrest C. ....Savannah
Wilson, Virgil R. ....Rosendale
Wood, W. Logan....Bolckow

AUDRAIN COUNTY MEDICAL SOCIETY

Alford, Redman Lee....Vandalia
Bland, Warren W. ....Vandalia
Coil, Paul E. ....Mexico
Dwyer, Thomas L. ....Vandalia
Garcia, Charles L. ....Mexico
Griffin, Fred ....Mexico
Harrison, John Frank....Mexico
Jolley, J. Frank....Mexico
Kallenbach, G. P. ....Mexico
McCall, William K. ....Laddonia
Moore, Josiah G. ....Chino, Calif.
O'Brien, Harry Francis....Mexico
Williams, Robert Sidney....Mexico

BARTON-DADE COUNTY MEDICAL SOCIETY

Atkins, James A. ....Muskogee, Okla.
Bickel, James T. ....Lamar
Bickel, Vern T. ....Lamar
Birsner, Frank H. ....Lockwood
Combs, T. D. ....Lockwood
Cowan, Watt O. ....Greenfield
Duckett, Claude E. ....Lamar
Guldner, Edmond ....Lamar
Knapp, Rudolph ....Golden City
Locker, George E. ....Iantha
Noltensmeyer, Milton H. ....Lamar
Spell, Frank R. ....Liberal

BATES COUNTY MEDICAL SOCIETY

Allen, Claude J. ....Rich Hill
Allen, William H., Jr. ....Hume
Cooper, John M. ....Butler
Ellett, William H. ....Appleton City
Hansen, Arthur L. ....Appleton City
LaHue, L. D. ....Butler
Lusk, Charles A. ....Butler
Lusk, Charles A., Jr. ....Butler
Luter, Carter W. ....Butler
Robinson, Edward E. ....Adrian
Wooldridge, A. Graham....Butler

BENTON COUNTY MEDICAL SOCIETY

Logan, James A. ....Warsaw
Reser, Thomas S. ....Cole camp

BOONE COUNTY MEDICAL SOCIETY

Ackerman, Lauren V. ....Columbia
Allen, Horace E. ....Columbia
Allen, Joseph E. ....Columbia
Baker, James M. ....Columbia
Baskett, Edgar D. ....Columbia
Battersby, Richard S. ....Columbia
Blumenschein, J. C. ....Columbia
Bradford, Oscar F. ....Columbia
Bricker, Eugene M. ....St. Louis
Bruner, Claude R. ....Columbia
Chiasson, E. Chaille....Columbia
Conley, Dudley S. ....Columbia
Cooper, Maurice Edmund....Columbia
Crouch, Richard L. ....Chicago
Delaney, Joseph H. ....Address Unknown
del Regato, J. A. ....Columbia
Dexheimer, Frank E. ....Columbia
Dietrich, Karl David....Columbia
Dysart, William P. ....Columbia
Gorelick, David F. ....Columbia
Griffith, Harry M. ....Columbia
Highsmith, L. S. ....Columbia
Jordon, James E. ....Maplewood
Kampschmidt, August W. ....Columbia
Lachance, Leopold ....Centralia
Leech, Charles A. ....Columbia
LeMone, David V. ....Columbia
McComas, Arthur R. ....Sturgeon
Martin, F. A. ....Columbia
Motley, Hurley L. ....Philadelphia, Pa.
Neal, M. Pinson....Columbia
Nifong, Frank G. ....Columbia
Overholser, Milton D. ....Columbia
Pryor, Harry B. ....Ashland
Robnett, Dudley A. ....Columbia
Schmidtke, Edwin C. ....Columbia
Schopp, Alvin C. ....Columbia
Simpson, Lloyd ....Columbia
Simpson, Robert H. ....Columbia
Smith, Stephen D. ....Columbia
Stewart, William J. ....Columbia
Stine, Dan G. ....Columbia
Sugarbaker, Everett D. ....Jefferson City
Suggett, Finis C. ....Columbia
Varian, Thelma S. ....Columbia
Ziegler, Newell R. ....Columbia

BUCHANAN COUNTY MEDICAL SOCIETY

Allaman, John M. ....St. Joseph
Bansbach, Joseph J. ....St. Joseph
Bauman, Louis C. ....St. Joseph
Beck, Leroi ....St. Joseph
Bell, John M. ....St. Joseph
Berney, Francis J. ....St. Joseph
Bertram, Charles W. ....St. Joseph
Bloomer, Gaylord T. ....St. Joseph
Bloomer, O. T. ....St. Joseph
Boteler, George M. ....St. Joseph
Brumm, Harold J. ....St. Joseph
Buck, Ronald ....St. Joseph
Burgher, Arthur E. ....St. Joseph
Burkwall, Herman F. ...Address Unknown
Byrne, John I. ....St. Joseph
Carle, Horace W., Jr. ....St. Joseph
Chiarottino, Joseph F. ....St. Joseph
Conrad, Harry S. ....St. Joseph
Conrad, Robert W. ....St. Joseph
Craig, Owen W. D. ....St. Joseph
Day, Maxwell ....St. Joseph
DeLamater, Hasbrouck ....St. Joseph
Disque, Andrew A. ....St. Joseph
DuMont, Clement C. ....St. Joseph
Dunsmore, J. M. ....St. Joseph
Elam, William T. ....St. Joseph
Eliscu, Fred ....St. Joseph
Elliott, John R. ....St. Joseph
Fassett, Charles W. ...Burlingame, Calif.
Ferguson, Luther J. ....St. Joseph
Fisher, Joseph L. ....St. Joseph
Fordyce, Claude P. ....St. Joseph
Forgrave, John R. ....St. Joseph
Forgrave, Leon Paul....St. Joseph
Forman, George William....St. Joseph
Fulkerson, Perry P. ....St. Joseph
Fuson, Levi H. ....St. Joseph
Goetowski, Paul ....St. Joseph
Goetze, William F. ....St. Joseph
Grant, Claude S. ....St. Joseph
Greenberg, Charles ....St. Joseph
Grimes, M. E. ....St. Joseph
Hansen, Walter J. ....St. Joseph
Hartigan, Frank X. ....St. Joseph
Herman, Allen I. ....St. Joseph

Howden, Thomas L. ..... St. Joseph
Hughes, Judson M. ..... St. Joseph
Hull, Walter S. ..... St. Joseph
Hunt, William J. ..... St. Joseph
Johnson, Delbert P. ..... Address Unknown
Kearby, Howard Denton ..... St. Joseph
Kiefer, R. W. ..... St. Joseph
Knepper, P. A. ..... St. Joseph
Kulowski, Jacob ..... St. Joseph
Lau, Gustav A. ..... St. Joseph
McDonald, Wilbur P. ..... St. Joseph
McGlothlan, Arthur B. ..... St. Joseph
Mays, Joseph W. ..... St. Joseph
Meluney, S. E. ..... St. Joseph
Miller, Eugene A. ..... St. Joseph
Minton, Robert S. ..... St. Joseph
Minton, William H. ..... St. Joseph
Moore, Walter Roger ..... St. Joseph
Morroway, James H. ..... St. Joseph
Morse, Marvin ..... St. Joseph
Muench, Albert H. ..... St. Joseph
Mullinax, Orr ..... St. Joseph
Mundy, Homer F. ..... St. Joseph
Neudorff, Louis G. ..... St. Joseph
O'Donoghue, James ..... St. Joseph
Paul, Thomas M. ..... St. Joseph
Petersen, H. E. ..... St. Joseph
Potter, Thompson E. ..... St. Joseph
Redmond, William ..... St. Joseph
Rosenthal, Arthur D. ..... St. Joseph
Rosenthal, Irwin I. ..... St. Joseph
Rost, William B. ..... St. Joseph
Roundy, Collis I. ..... St. Joseph
Ryan, John Harold ..... St. Joseph
Saferstein, T. Harry ..... St. Joseph
Senne, Herbert C. ..... St. Joseph
Senor, Samuel D. ..... St. Joseph
Senor, Samuel Earl ..... St. Joseph
Shores, Earl M. ..... St. Joseph
Simmons, Benjamin B. ..... St. Joseph
Smith, Andrew J. ..... St. Joseph
Smith, Clifton ..... St. Joseph
Spencer, Floyd H. ..... St. Joseph
Stacy, Winton T. ..... Fort Sill, Okla.
Stamey, James Thomas ..... St. Joseph
Tadlock, Baxter W. ..... St. Joseph
Tahir, Mohammad ..... St. Joseph
Talty, Matthew H. ..... Houston, Tex.
Thompson, Fred G. ..... St. Joseph
Thompson, F. G., Jr. ..... St. Joseph
Timerman, Arthur R. ..... St. Joseph
Toothaker, Wayne M. ..... St. Joseph
Wadlow, Ernst E. ..... St. Joseph
Werner, Charles H. ..... St. Joseph
Whitsell, John C. ..... St. Joseph
Whitsell, Ora Earl ..... St. Joseph
Wisser, John J. ..... St. Joseph
Wortley, Cabray ..... St. Joseph
Wright, Gordon D. ..... St. Joseph

BUTLER COUNTY MEDICAL SOCIETY

Biggs, Fred J., Jr. ..... Poplar Bluff
Brandon, Walter L. ..... Poplar Bluff
Brookreson, Alton F. ..... Poplar Bluff
Clay, Hampson S. ..... Poplar Bluff
Currie, Kenneth P. ..... Poplar Bluff
Dinelli, Frank E. ..... Poplar Bluff
Fonda, James W. ..... Poplar Bluff
Goforth, Clifford ..... Doniphan
Harwell, James Lee ..... Poplar Bluff
Harwell, J. Lester ..... Poplar Bluff
Henrickson, Hardin M. ..... Poplar Bluff
Henrickson, H. O. ..... Poplar Bluff
Hoxie, D. A. ..... Portsmouth, Va.
Kneibert, Fred L. ..... Poplar Bluff
McPheeters, James W. ..... Poplar Bluff
McPheeters, J. W., Jr. ..... Poplar Bluff
Markel, Arthur D. ..... Poplar Bluff
Post, Cyril A. ..... Poplar Bluff
Rowe, Alfred R. ..... Poplar Bluff
Spaulding, William ..... Poplar Bluff
White, Homer E. ..... Naylor

CALDWELL-LIVINGSTON COUNTY MEDICAL SOCIETY

Barney, Reuben ..... Chillicothe
Booth, Herbert R. ..... Hamilton
Carpenter, George W. ..... Chillicothe
Collier, Alfred ..... Chillicothe
Conrad, Joseph ..... Chillicothe
Daley, Frank R. ..... Hamilton
Daley, Lyle M. ..... Hamilton
Dowell, Donald M. ..... Chillicothe
Dowell, Horace S. ..... Chillicothe
Gale, Joseph F. ..... Chillicothe
Grace, Charles M. ..... Chillicothe
Grace, Clarence M. ..... Chillicothe
Patterson, Henry H. ..... Braymer
Thompson, Emma A. B. ..... Breckenridge
Vandiver, Virgil D. ..... Chillicothe
Wilbur, Clifford H. ..... Polo

CALLAWAY COUNTY MEDICAL SOCIETY

Blasko, John J. ..... Gulfport, Miss.
Brown, John J. ..... Fulton
Cremer, William J. ..... Fulton
Crews, Robert N. ..... Fulton
Durst, Henry ..... Fulton
Fagley, Raymond C. ..... West Orange, N. J.
Gish, Rutledge ..... Fulton
Hall, Robert G. ..... Nevada
McCall, Greene D. ..... Fulton
McCubbin, J. Burlie ..... Fulton
Nichols, Charles B. ..... Auxvasse
Price, Robert P. ..... Fulton
Rusk, Earl McD. ..... New Bloomfield
Tate, Prentiss S. ..... Fulton
Williamson, William H. ..... Mokane
Wood, George F. ..... Fulton

CAMDEN COUNTY MEDICAL SOCIETY

Claiborne, Edward G. ..... Camdenton
Myers, George T. ..... Macks Creek

CAPE GIRARDEAU COUNTY MEDICAL SOCIETY

Ashley, Hugh, Jr. ..... Cape Girardeau
Ashley, Hugh Vincent ..... Cape Girardeau
Barnes, Asa ..... San Francisco, Calif.
Barnes, Seth S. ..... Address Unknown
Berry, John W. ..... Cape Girardeau
Blaylock, Richard D. ..... Cape Girardeau
Campbell, Edward D. ..... Cape Girardeau
Cochran, J. H. ..... Cape Girardeau
Crites, Edward ..... Sedgewickville
Cunningham, Harvey L. ..... Cape Girardeau
Davault, Webster W. ..... Allenville
Drace, James J. ..... Cape Girardeau
Elrod, Dennis B. ..... Cape Girardeau
Estes, Albert M. ..... Jackson
Ford, Walter W. ..... Gordonville
Fuerth, Arthur L. ..... Cape Girardeau
Gibson, Ora James ..... Cape Girardeau
Hall, Frank W. ..... Cape Girardeau
Herbert, Charles T. ..... Cape Girardeau
Juden, Alexander G. ..... Cape Girardeau
Keim, John Harry ..... Cape Girardeau
McDonald, Eugene F. ..... Jackson
Nussbaum, Paul B. ..... Cape Girardeau
Oehler, William F. ..... Cape Girardeau
Reynolds, Garland A. ..... Cape Girardeau
Ritter, Raymond A. ..... Cape Girardeau
Ruff, Troy E. ..... Jackson
Schulz, Gustav B. ..... Cape Girardeau
Seabaugh, D. I. L. ..... Jackson
Seabaugh, D. Rusby ..... Cape Girardeau
Seabaugh, Oda L. ..... Cape Girardeau
Shelby, M. H. ..... Cape Girardeau
Sparhawk, William J. ..... Cape Girardeau
Trolinger, J. H. ..... Jackson
Tygett, Glenn J. ..... Cape Girardeau
Wescoat, William H. ..... Cape Girardeau
Wilson, Charles F. ..... Cape Girardeau
Yount, William E. ..... Cape Girardeau
Zimmermann, C. A. W. ..... Cape Girardeau

CARROLL COUNTY MEDICAL SOCIETY

Atwood, J. Morris ..... Carrollton
Atwood, William G. ..... Carrollton
Bales, Eugene L. ..... Carrollton
Platz, John H. ..... Carrollton
Reed, Carl H. ..... Carrollton
Staton, R. Hamilton ..... Carrollton

CARTER-SHANNON COUNTY MEDICAL SOCIETY

Cotton, Tolman W. ..... Van Buren
Davis, Robert I. ..... Birch Tree
Eudy, William T. ..... Eminence
Hyde, Frank ..... Eminence
Rollins, H. D. ..... Winona

CASS COUNTY MEDICAL COCIETY

Barger, O. B. ..... Harrisonville
Beckman, William ..... Strasburg
Cramer, Quentin ..... Address Unknown
Crawford, Harry S. ..... Long Beach, Calif.
Eklund, Alfred W. ..... Pleasant Hill
Ellis, Frank B. ..... Garden City
Griffith, Edgar M. ..... Harrisonville
Hartwell, Basil O. ..... Drexel
Long, David S. ..... Harrisonville
Murray, Lotis V. ..... Pleasant Hill
Neis, Harry B. ..... Harrisonville
Robbins, Martin V. ..... Peculiar
Scott, James U. ..... Harrisonville
Tracy, Herbert A. ..... Belton
Triplett, Jacob S. ..... Harrisonville

CHARITON-MACON-MONROE-RANDOLPH COUNTY MEDICAL SOCIETY

Baker, Henry ..... Moberly
Barnett, Floyd A. ..... Paris
Billeter, William J. ..... Bynumville
Buck, Ulysses G. ..... Rothville
Bulkley, Clarence H. ..... LaPlata
Davis, Paul C. ..... Neosho
Dreyer, Philip V. ..... Huntsville
Eggleston, E. E. ..... Macon
Ellis, Sam ..... St. Louis
Epperly, R. G. ..... Huntsville
Erni, Harry E. ..... Macon
Fellows, William W. ..... Aspinwall, Pa.
Fleming, Jacob W., Jr. ..... Moberly
Fleming, Thomas S. ..... Moberly
Griffiths, Harry C. ..... Moberly
Gronoway, Terrence P. ..... Macon
Hardy, John W. ..... Sumner
Harms, Florian L. ..... Salisbury
Hawkins, George W. ..... Salisbury
Hawkinson, W. O. ..... Roanoke
Huber, Lasley Earl ..... Moberly
Hyatt, William T. ..... St. Louis
Lewis, Andrew L. ..... Sumner
Lucas, William B. ..... Mendon
McAdam, James D. ..... Prairie Hill
McCormick, Frank L. ..... Moberly
McMurray, Marvin C. ..... Paris
Miller, D. Herbert ..... Muskogee, Okla.
Miller, Howard S. ..... Macon
Murphy, Joseph G. ..... Palestine, Tex.
Newton, Henry O. ..... LaPlata
Nickell, Luther O. ..... Moberly
Price, Robert P. ..... Fulton
Ragsdale, George M. ..... Paris
Rowlette, A. P. ..... Moberly
Smith, Carl C. ..... Moberly
Stokes, James Bell ..... Excello
Streetor, Roderick D. ..... Moberly
Stuart, Daniel D. ..... Brunswick
West, William D. ..... Mendon
Winn, James W. ..... Higbee
Young, Robert H. ..... Moberly
Zillman, August W. ..... Keytesville

CLAY COUNTY MEDICAL SOCIETY

Altomare, Edward P. ..... Excelsior Springs
Ashmore, Buell L. ..... Chillicothe, Ohio
Bailey, William H. ..... Excelsior Springs
Baird, J. Edward ..... Excelsior Springs
Dawson, Lerton V. ..... Excelsior Springs
Dunham, R. H. ..... North Kansas City
Dwyer, Reinhardt D. ..... North Kansas City
Fowler, I. Charles ..... North Kansas City
Goodson, William H. ..... Liberty
Grace, John F. ..... Excelsior Springs
Hardegree, Harvey ..... Bronx, N. Y.
Hendren, Glenn W. ..... Liberty
Hobbs, Earl B. ..... Smithville
Houck, Russell M. ..... Excelsior Springs
Howell, James Albert ..... Muskogee, Okla.
Kaplan, Rubin H. ..... Excelsior Springs
Langhus, Melvin O. ..... North Kansas City
McCormick, James E., North Kansas City

McCracken, Samuel R. .Excelsior Springs
Musgrave, David E. ...Excelsior Springs
Parker, Robert H. ....North Kansas City
Pate, O. S. .....North Kansas City
Porter, Russell C. .....North Kansas City
Prather, Roy William...Excelsior Springs
Robichaux, Eugene B. ..Excelsior Springs
Robichaux, Eugene C. ..Excelsior Springs
Schroeder, Sidney O. .....Liberty
Schumacher, N. R. ....Address Unknown
Spelman, Archibald E. .....Smithville
Sprong, Aaron A. .....Excelsior Springs
Waterman, F. M. .....Liberty
Webb, J. W., Jr. .....North Kansas City

CLINTON COUNTY MEDICAL SOCIETY

Dunkeson, Edward B. .....Lathrop
Kimes, Ira D. .....Cameron
Longfield, Fred J. .....Lathrop
Peters, Melvin L. .....Cameron
Reynolds, Stephen D. .....Plattsburg
Spalding, Wilber B. .....Plattsburg
Starks, John C. .....Gower
Wilbur, Ronald E. .....Cameron

COLE COUNTY MEDICAL SOCIETY

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Huelsmann, Donald .....Boonville
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Morgan, Donald Nye.....Boonville
Stone, William E. .....Boonville
Stuart, Byron M. .....Boonville
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Winn, George W. .....Boonville
Ziegler, William H. .....Boonville

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Griffin, Olin A., Jr. .....Buffalo
Harrell, Henry J. .....Morrisville
McCraw, Doyle C. .....Bolivar
O'Brien, J. R. .....Bolivar
Plummer, Grover C. .....Buffalo
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Tillman, Walter W., Jr. .....Bolivar
Wrinkle, Thomas D. .....Halfway

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Johnson, Glenn D. .....Maysville

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Beall, Homer .....Malden
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Cofer, James C. .....Kennett
Dempsey, D. T. .....Kennett
Dunmore, George O. .....Kennett
English, Wallace D. .....Cardwell
Glasgow, Marvin C. .....Cardwell
Linton, C. S. .....Kennett
Martin, Robert E. .....Senath
Mitchell, Samuel E. .....Malden
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Presnell, George R. .....Kennett
Rigdon, Thomas J. .....Kennett
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Beatie, William R. .....Springfield
Bethtold, Frederick F. .....Springfield
Boots, Roger H. .....Springfield
Box, Earnest M. .....Springfield
Bruton, Tyrrel S. .....Springfield
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Busiek, Urban J. .....Springfield
Callaway, Guy D. .....Springfield
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Coffelt, Kenneth C. .....Springfield
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White, R. Ned.....Springfield
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Jones, Maurice L. ..... Kansas City
Jones, Theodore R. ..... Kansas City
Juarez-Reyna, Guillermo .... Kansas City
Kantor, Julius M. ..... Kansas City
Kealhofer, George C. ..... Kansas City
Keeling, Irene C. ..... Kansas City
Keith, Willis E. ..... Kansas City
Kelly, Eugene H. ..... Kansas City
Kennedy, John Oscar ..... Kansas City
Kent, Bela Kaszas ..... Kansas City
Kent, Clifford F. ..... Kansas City
Kerr, Russell W. ..... Kansas City
Ketcham, William M. ..... Kansas City
Ketron, Marvin B. ..... Kansas City
Kienberger, Paul A. ..... Kansas City
Kiene, Richard H. ..... Kansas City
Kitchen, William M. ..... Kansas City
Klein, Edward H. ..... Kansas City
Klepinger, Dayton P. ..... Kansas City
Knappenberger, George E. .... Kansas City
Knerr, Ellsworth B. .... Address Unknown
Knight, John S. ..... Kansas City
Knight, Lyle B. ..... Lees Summit
Knoch, H. Kermit ..... Kansas City
Knox, Andrew C. ..... Kansas City
Knox, Earl R. ..... North Kansas City
Koehler, Charles A. ..... Kansas City
Koenig, Frank J. ..... Kansas City
Kohn, Cecil M. ..... Kansas City
Koritschoner, Robert ..... Kansas City
Korth, William M. ..... Kansas City
Kovitz, Louis ..... Kansas City
Kraft, Jacob ..... Kansas City
Kranson, Seymour J. ..... Independence
Krueger, Owen W. ..... Kansas City
Kuhn, William F., II ..... Kansas City
Kyger, E. Ross ..... Kansas City
Kyger, Fred B. ..... Kansas City
Kyner, Thomas A. ..... Kansas City
Lacy, N. Eugene ..... Kansas City
Laffoon, France L. ..... Raytown
Lakaytis, Charles A. ..... Kansas City
Lamar, Frederick C. ..... Kansas City
Lamar, Robert F. ..... Kansas City
Laning, J. Halcombe ..... Kansas City
Lapp, Harry C. ..... Kansas City
Lapp, John G. ..... Kansas City
Laurenzana, Frank Paul ..... Kansas City
Layton, Ira C ..... Kansas City
Lee, Chester E. ..... Kansas City
Lee, George C. ..... Kansas City
Lehner, Richard L. ..... Kansas City
Leifer, William W. ..... Kansas City
Leitch, Cecil George ..... Kansas City
Leitz, Frank Bantley ..... Kansas City
Lemoine, Albert N. ..... Kansas City
Lemoine, A. N., Jr. ..... Kansas City
Lennon, Benjamin B. ..... Kansas City
Leonard, Ward H. ..... Kansas City
Levey, Harry B. ..... Kansas City
Lewis, William E. ..... Kansas City
Lieberman, B. Albert ..... Kansas City
Lieberman, B. Albert, Jr. .... Kansas City
Liersch, Joseph C. ..... Kansas City
Lilly, Terry Erastus ..... Kansas City
Lindquist, Carl N. ..... Kansas City
Link, Vance Eugene ..... Independence
Littauer, David ..... Kansas City
Lockwood, Ira H. ..... Kansas City
Lowrey, Ford Jackson ..... Kansas City
Lowry, Charles F. ..... Kansas City
Lucy, Robert E. ..... Muncie, Ind.
Luppens, Albert F. ..... Kansas City
Lux, Paul ..... Kansas City
Lyddon, Harold R., Jr. ..... Kansas City
McAlester, Andrew W., Jr. .. Kansas City
McAlester, Andrew W., III ... Kansas City
McCalman, Ira J. ..... Kansas City
McCandless, Oliver H. ..... Independence
McCarthy, William F. ..... Independence
McCarty, Virgil Warren ..... Kansas City
McClanahan, Robert C. ..... Kansas City
McCubbin, Clarence Roy .... Kansas City
McDonnell, John F. ..... Kansas City
McFarland, M. D. ..... Kansas City
McHale, Thomas C. ..... Kansas City
McKee, Joseph W. ..... Kansas City
McLeod, John ..... Kansas City
McMillan, Thomas E. ..... Kansas City
McPherson, Owen P. ..... Kansas City
McVay, James R. ..... Kansas City
MacInnis, Florence E. ..... Kansas City
Maclean, John A. ..... Ventura, Calif.
Major, Hermon S. ..... Kansas City
Mantz, Herbert L. ..... Kansas City
Marks, Mark M. ..... Kansas City
Marshall, Cameron F. ..... Kansas City
Marty, Loraine A. .... Lakeview Heights
Merriman, Clay S. ..... Kansas City
Middleton, James ..... Arlington, Va.
Miller, Clinton L. ..... Lees Summit
Miller, Gerald L. ..... Kansas City
Miller, Hugh ..... Kansas City
Miller, Richard C. ..... Kansas City
Miller, Wade Hampton ..... Kansas City
Miller, Walter P. ..... Kansas City
Mitchell, Robert H. ..... Kansas City
Mixson, William C. ..... Kansas City
Mollica, Stephen G. ..... Kansas City
Monahan, Elmer P. ..... Kansas City
Montgomery, James Gordon .. Kansas City
Mooney, Justin Loeb ..... Kansas City
Mooney, Marcel L. ..... Kansas City
Moore, Louis T. ..... Kansas City
Moore, Robert A. ..... Kansas City
Moreland, George H. ..... Kansas City
Morest, F. Stanley ..... Kansas City
Morgan, David B. ..... Kansas City
Morrow, Raymond L. ..... Kansas City
Moss, Paul ..... Kansas City
Mueller, Ralph Edward ..... Kansas City
Mullen, Leo M. ..... Kansas City
Murphy, Franklin D. ..... Kansas City
Murphy, Robert J. ..... Kansas City
Myers, Benjamin Lee ..... Kansas City
Myers, John L. ..... Kansas City
Myers, John Simeon ..... Kansas City
Myers, Myron A. ..... Kansas City
Myers, Ralph R. ..... Kansas City
Myers, Robert M. ..... Kansas City
Myers, Wilson A. ..... Kansas City
Myers, W. Eugene ..... Kansas City
Nelson, Charles S. ..... Kansas City
Nelson, James M. ..... San Carlos, Calif.
Nichols, Arthur L., Jr. ..... Kansas City
Nickson, Charles E., Jr. .... Independence
Nigro, Dominick M. ..... Kansas City
Nigro, E. Robert ..... Kansas City
Nigro, Joseph Albert ..... Kansas City
Norberg, George B. ..... Kansas City
Nunn, Pat Morris .... Kansas City, Kan.
O'Brien, Leo Aloysius ..... Kansas City
O'Connell, P. J. ..... Kansas City
Ockerblad, Nelse F. ..... Kansas City
Ogilvie, John H. ..... Kansas City
Oglevie, Rial R. ..... Kansas City
O'Neil, James H. ..... Kansas City
Osgood, George M. ..... Kansas City
Owens, Graham Joseph ..... Kansas City
Owens, Hugh H. ..... Kansas City
Owens, Michael Joseph ..... Kansas City
Owens, Patrick H. ..... Kansas City
Pakula, Sidney F. ..... Kansas City
Pallett, Harold A. ..... Kansas City
Parker, Elmer L. ..... Kansas City
Parker, Hubert M. ..... Kansas City
Parker, Joseph W. ..... Kansas City
Parsons, Eugene O. ..... Kansas City
Passman, Harold ..... Kansas City
Paul, John B. ..... Kansas City
Pearson, Paul E. ..... Kansas City
Peete, Don Carlos ..... Kansas City
Pendleton, George F. ..... Kansas City
Perll, Maurice F. ..... Kansas City
Perll, Rita D. ..... Kansas City
Perry, Ralph ..... Kansas City
Peterson, Milton C. ..... Kansas City
Petry, Ezra L. ..... Kansas City
Pfuetze, Edwin L. ..... Kansas City
Phelps, Charles Ray ... Address Unknown
Pickard, Matthew W. .....
..... Bloomfield Hills, Mich.
Pickard, Nicholas S. ..... Kansas City
Pickens, Edgar E. ..... Kansas City
Pierron, John B. ..... Kansas City
Pinkston, Omar W. ..... Kansas City
Piper, Donald K. ..... Kansas City
Pipkin, F. Garrett ..... Kansas City
Pittam, Jesse Thomas ..... Kansas City
Pittam, Radford F. ..... Kansas City
Platt, Paul C. ..... Kansas City
Polk, George M. ..... Independence
Pollock, Leo Howard ..... Kansas City
Poorman, Bert A. ..... Kansas City
Porter, Louis ..... Kansas City
Potter, Lee G. ..... Kansas City
Powers, John M. ..... Kansas City
Prentiss, Harry S. ..... Kansas City
Preston, Albert, Jr. ..... Kansas City
Price, William Phillip ..... Oswego, Kan.
Printz, Joseph H. ..... Kansas City
Printz, Otto Jack ..... Kansas City
Quistgard, Paul Cameron ... Kansas City
Rader, Ada Brainard ..... Martin City
Ragan, Romulus C. ..... Kansas City
Rannie, Paul R. ..... Independence
Reitz, Carl H. ..... Kansas City
Remley, George C. ..... Kansas City
Rice, Grover C. ..... Brunswick
Ridge, Frank I. ..... Kansas City
Riller, Lowell E. ..... Independence
Rinkel, Herbert J. ..... Kansas City

Rising, Jesse D. ..... Kansas City
Robb, Thomas P. ..... Philomath, Ore.
Roberts, Harold M. ..... Kansas City
Roberts, Sam E. ..... Kansas City
Robertson, James Archie .... Kansas City
Robinson, David Beach ..... Kansas City
Robinson, David Weaver .... Kansas City
Robinson, Ernest Kip ..... Kansas City
Robinson, G. Wilse ..... Kansas City
Robinson, G. Wilse, Jr. ..... Kansas City
Rose, Charles William ..... Kansas City
Rosenwald, Leon ..... Kansas City
Roy, Gustave A. ..... Anaheim, Calif.
Rubnitz, Leon H. ..... Kansas City
St. Clair, Robert L. ..... Kansas City
Saferstein, Lester ..... Kansas City
Saladino, Anthony ..... Kansas City
Samuelson, Edward A. ..... Kansas City
Sanders, Clarence E. ..... Kansas City
Sanders, William F. ..... Kansas City
Saunders, Everett L. ..... Independence
Scarpellino, Louis A. ..... Kansas City
Schaefer, Charles L. ..... Kansas City
Schaerrer, Hans ..... Kansas City
Schaerrer, William C. ..... Kansas City
Schauffler, Robert McE. ..... Kansas City
Schiffmacher, J. E. ..... Kansas City
Schmidt, Edward C. H. ..... Kansas City
Schorer, Edwin Henry ..... Kansas City
Schutz, Carl Bryant ..... Kansas City
Schutz, Richard B. ..... Kansas City
Seely, Clark W. ..... Kansas City
Sewell, Minor F. ..... Kansas City
Shapiro, Lazare Melvin ..... Kansas City
Sheldon, John G. ..... Kansas City
Sheldon, John, Jr. ..... Kansas City
Sherman, C. A. ..... Kansas City
Sherwood, Loraine ..... Kansas City
Shofstall, Charles K. ..... Kansas City
Shuey, Herbert H. ..... Kansas City
Shumate, David L. ..... Kansas City
Shypper, Moses J. ..... Kansas City
Simpson, Morris B. ..... Kansas City
Sinclair, Alexander B. ..... Kansas City
Singleton, J. Milton ..... Kansas City
Skinner, Edward H. ..... Kansas City
Skinner, John Osman ..... Kansas City
Skinner, John T. ..... Kansas City
Skoog, Andrew L. ..... Kansas City
Slusher, Ernest W. ..... Kansas City
Small, Walter L. ..... Kansas City
Smith, Arthur B. ..... Kansas City
Smith, Clinton K. ..... Kansas City
Smith, James D. ..... Kansas City
Smith, Robert W. ..... Kansas City
Snider, Samuel Harrison ..... Kansas City
Snyderman, Henry ... Leavenworth, Kan.
Soderberg, N. B. ..... Cleveland, Ohio
Sophian, Abraham ..... Kansas City
Spafford, Allen Leo ..... Kansas City
Staggs, William A. ..... Kansas City
Staley, Harry R. ..... Kansas City
Stapp, Roth Van Allen ..... Kansas City
Statland, Harry ..... Kansas City
Steffen, Lawrence F. ..... Kansas City
Stephenson, K. L. ..... New Orleans, La.
Stewart, John H. ..... Kansas City
Stockwell, A. Lloyd ..... Kansas City
Summers, Caldwell B. ..... Kansas City
Sutton, Richard L. ..... McAllen, Tex.
Sutton, Richard L., Jr. ..... Kansas City
Swenson, Alvin L. ..... Kansas City
Swisher, Robert C. ..... Kansas City
Switzer, Clyde ..... Grandview
Tarson, Solomon S. ..... Kansas City
Tasker, Charles B. ..... Kansas City
Teachenor, Frank R. ..... Kansas City
Teall, Raymond E. ..... Kansas City
Tesson, James Albert ..... Kansas City
Thiele, George H. ..... Kansas City
Thiessen, Edward Herman .. Kansas City
Thomason, Henry E. ..... Kansas City
Thorn, Druery R. ..... Kansas City
Thurlow, Ralph M. ..... Kansas City
Thym, Herman H. ..... Kansas City
Townshend, Grafton D. ..... Kansas City
Treharne, Frank E. ..... Independence
Trimble, William K. ..... Kansas City
Trippe, Harrison C. ..... Kansas City
Trowbridge, Barnard C. ..... Kansas City
Trowbridge, Ellsworth Haydn, Kansas City
Trowbridge, Ellsworth H., Jr., Kansas City
Tuthill, Herbert ..... Kansas City
Tuttle, Floyd Wilkins ..... Blue Springs
Twyman, Elmer D. .... San Marino, Calif.
Twyman, Richard A. ..... Kansas City
Uhlmann, Robert ..... Kansas City
Underwood, Dick Holland .... Kansas City
Underwood, Johnson, Jr... N. Kansas City
Underwood, Ross Holland ... Kansas City
Unger, Harold ..... Kansas City
Upsher, Albert E. ..... Kansas City
Valentine, Herbert S. ..... Kansas City
Van Biber, James T. ..... Kansas City
Van Del, Dwight T. ..... Kansas City
Vanorden, Herbert F. ..... Kansas City
Viley, Leland P. ..... Kansas City
Virden, C. Edgar ..... Kansas City
Voegelin, Samuel ..... Kansas City
Wade, Frederick E. ..... Kansas City
Wakefield, Franklin, Jr. ..... Kansas City
Walker, James Charles ..... Kansas City
Walker, John W. ..... Kansas City
Wall, Arthur H. ..... Sierra Madre, Calif.
Wall, Harry C. ..... Kansas City
Wallace, Frank Barnett ..... Kansas City
Walthall, Damon O. ..... Kansas City
Watson, B. Frank ..... Kansas City
Watson, Ethel ..... Independence
Weaver, John S. ..... Kansas City
Webster, Joseph G. ..... Kansas City
Welker, Joseph E. ..... Kansas City
Weltmer, Roger P. ..... Kansas City
Wheeler, John H. ..... Kansas City
White, Charles H. ..... Kansas City
White, Edwin C. ..... Kansas City
White, George A. ..... Kansas City
White, Stoughton F. .... New York, N. Y.
Whiteman, John R. ..... Kansas City
Whitman, Doyle C. ..... Kansas City
Wien, Irving A. ..... Kansas City
Wilkinson, Everett A. ..... Kansas City
Willhelmy, Ellis W. ..... Kansas City
Williams, Delon A. ..... Kansas City
Williams, Robert A. ..... Kansas City
Williams, Vincent T. ..... Kansas City
Williamson, William P. ..... Kansas City
Willits, Lyle G. ..... Kansas City
Willoughby, Jean B. ..... Sayre, Pa.
Wilson, Clifford C. ..... Kansas City
Wilson, Fernando I. ..... Kansas City
Wilson, Hester J. ..... Kansas City
Winkelman, Esther B. ..... Kansas City
Winkler, John J. ..... Kansas City
Winston, Bernard H. ..... Kansas City
Withers, Orval R. ..... Kansas City
Wolf, Jack W. ..... Kansas City
Wood, Laurence E. ..... Kansas City
Woodfin, Lyle L. ..... Rafail, Calif.
Woods, Harold V. ..... Independence
Wortman, Robert F. ..... Kansas City
Wright, R. Paul ..... Kansas City
Yazel, Herman E. ..... Kansas City
Young, Jesse W. ..... Kansas City, Kan.
Zellermayer, Jacob ..... Kansas City
Ziegler, Allen M. ..... Kansas City
Zoglin, Nathan M. ..... Kansas City
Zuber, Harold V. ..... Kansas City

JASPER COUNTY MEDICAL SOCIETY

Alberty, Omer L. ..... Carl Junction
Black, Mervin H. ..... Joplin
Blanke, Otto T. ..... Joplin
Bragdon, George H. ..... Reeds
Byrd, Homer E. ..... Carthage
Chenoweth, J. Albert ..... Joplin
Cline, Edward W. ..... Webb City
Clinton, Lloyd B. ..... Carthage
Coates, Chester C. ..... Joplin
Coombs, Miller O. ..... Joplin
Craig, Irwin T. ..... Joplin
Craig, William E. ..... Moberly
Crawford, Archie L. ..... Joplin
DeTar, Burleigh E. ..... Joplin
Douglass, Jesse E. ..... Webb City
Eliscu, Juliette ..... Joplin
Ferguson, Robert M. ..... Webb City
Gale, Richard ..... Welch, W. Va.
Grantham, Samuel A., Jr. ..... Joplin
Gregg, Arthur M. ..... Joplin
Hall, Marvin F. ..... Joplin
Hamilton, Eugene H. ..... Joplin
Harris, Russell D. ..... Cleveland, Ohio
Hornback, Edward R. ..... Joplin
Howard, Walter M. ..... Joplin
Hurst, W. W. ..... Joplin
Isbell, Charles H. ..... Carthage
James, Edward D. ..... Joplin
James, Robert M. ..... Joplin
Jeans, V. ..... Joplin
Johnson, Edward E. ..... Joplin
Kenney, Verna Elbert ..... Joplin
Kuhn, John R., Jr. ..... Joplin
Laney, Ronald L. ..... Joplin
Leaming, Harry A. ..... Joplin
Loveland, William S. ..... Joplin
McIntire, Emery J. ..... Carthage
McNew, William T. ..... Carthage
Mack, Mary L. ..... Joplin
Maddox, John D. ..... Joplin
Meredith, Guy I. ..... Joplin
Mitchell, Ernest ..... Joplin
Myers, Roy E. ..... Joplin
Needels, Orval T. ..... Webb City
Neff, Robert L. ..... Joplin
Newkirk, Richard C. ..... Joplin
Poor, Carl W. ..... Diamond
Post, Winfred L. ..... Joplin
Powers, Everett ..... Carthage
Prichett, Paul L. ..... Webb City
Putnam, John A. ..... Carthage
Reid, Charles T. ..... Joplin
Rosenthal, Frances E. ..... Joplin
Schoeberl, C. B. ..... Joplin
Schulte, G. A. ..... Joplin
Scorse, Sidney W. ..... Joplin
Simmons, Leroy ..... Address Unknown
Sims, John L. ..... Joplin
Smith, William Russell ..... Carthage
Stormont, Riley M. ..... Webb City
Van Urk, Jules B. ..... Carthage
Walker, Paul W. ..... Joplin
Webster, Roger W. ..... Carthage
Whitten, M. Foster ..... Carthage
Wilbur, Herbert L. ..... Joplin
Williams, Bill H. ..... Joplin
Wood, George H. ..... Carthage
York, William B. ..... Sarcoxie

JEFFERSON COUNTY MEDICAL SOCIETY

Bolgar, Bartholomew ..... Festus
Commerford, James J. ..... Crystal City
Donnell, Robert H. ..... Crystal City
Donnell, Thomas A. ..... DeSoto
Edwards, T. Burton ..... Cedar Hill
Fallet, Charles E. ..... DeSoto
Gibson, Walter E., Sr. ..... DeSoto
Hopson, George ..... DeSoto
McKinstry, Karl V. ..... DeSoto
Reich, Oliver F. ..... Kimmswick
Rutledge, John F. ..... Crystal City
Senn, Emmett J. ..... Herculaneum
Sum, Othmar J. ..... Barnhart
Yoskit, Harry ..... Festus

JOHNSON COUNTY MEDICAL SOCIETY

Andruss, Edward ..... Holden
Cooper, R. Lee ..... Warrensburg
Damron, Oscar H. ..... Warrensburg
Grove, Gulph W. ..... Knobnoster
Harkness, Harry ..... Warrensburg
Johnson, Charles S. ..... Warrensburg
McKinney, Ralph F. ..... Warrensburg
Maxson, T. Reed ..... Warrensburg
Parker, Harry F. ..... Warrensburg
Patterson, William R. ..... Warrensburg
Rawlins, Kelly ..... Holden
Schofield, Linn J. ..... Warrensburg
Thompson, William G. ..... Holden

LACLEDE COUNTY MEDICAL SOCIETY

Carlton, Charles E. ..... Stoutland
Carrington, Howard W. ..... Lebanon
Casey, Shederic A. ..... Lebanon
Harrell, Roosevelt E. ..... Lebanon
Hope, James L. ..... Lebanon
Jenkins, Paul A. ..... Lebanon
Lindsay, John W. ..... Conway
Peckham, John W. ..... St. Louis
Saylor, Edward ..... Phillipsburg
Summers, Jacob H. ..... Lebanon

LAFAYETTE COUNTY MEDICAL SOCIETY

Best, Robert ..... Higginsville
Braecklein, William A. .... Tucson, Ariz.
Brasher, Ben H. ..... Lexington
Cope, Josef S ..... Kansas City
Fredendall, George W. ..... Lexington
Garner, Lynn M. ..... Jefferson City

Johnston, A. D. ....Fort Scott, Kan.
Kelling, Douglas G. ....Waverly
Kelling, George A. ....Waverly
Kelling, Jordan ....Waverly
Koppenbrink, Walter E. ....Higginsville
Lissack, Edmund ....Concordia
Liston, Odus ....Oak Groves
Martin, Wilfred E. ....Odessa
Moore, Ernest M. ....Higginsville
Moore, Ernest M., Jr. ....Higginsville
Nisbet, Eliga B. ....Odessa
Payne, Bryan T. ....Lexington
Ryland, C. T. ....Lexington
Schooley, R. C. ....Odessa
Wallace, Edwin S. ....Washington, D. C.
Ward, Joe ....Lexington
Watts, Robert B. ....Wellington
Willis, John Buren ....Mayview

LEWIS-CLARK-SCOTLAND COUNTY MEDICAL SOCIETY

Bridges, James R. ....Kahoka
Davis, Landis Y. ....Canton
Ellery, William L. ....LaGrange
Jennings, P. W. ....Canton
Johansen, Frederick A. ....Carville, La.
Lillard, Archie H. ....LaBelle

LINCOLN COUNTY MEDICAL SOCIETY

Creech, Joseph C. ....Troy
Damron, O. E. ....Elsberry
Harris, Harold S. ....Troy
Hicks, Edward A. ....Troy
Keeling, Forrest V. ....Elsberry
Neunlist, Percy C. ....Old Monroe
Penn, Robert M. ....Silex
Woeger, Jacob G. ....Whiteside

LINN COUNTY MEDICAL SOCIETY

Bohnsack, Ralph W. ....Brookfield
Brownfield, Samuel T. ....Brookfield
Campbell, C. A. ....Marceline
Cantwell, James L. ....Bucklin
Dixon, John Rex ....Brookfield
Ellis, William W. ....Marceline
Haley, Roy R. ....Brookfield
Hurst, Ben B. ....Marceline
Lucas, John H. ....Brookfield
McArtor, Thomas R. ....Browning
Ottman, Philip A. ....Marceline
Rhoads, Mark H. ....Brookfield
Weir, Edward F. ....Meadville

MARION-RALLS COUNTY MEDICAL SOCIETY

Birney, William P. ....Hannibal
Blue, Arthur B. ....Hannibal
Brown, John E. ....Perry
Chilton, James C. ....Hannibal
Francka, W. F. ....Hannibal
Goodrich, Howard B. ....Hannibal
Greene, Harry L. ....Hannibal
Hardesty, Joel W. ....Hannibal
Hornback, George A. ....Hannibal
Kibbe, John H. ....Monroe City
Landau, Daniel B. ....Hannibal
Lanning, Robert J. ....Hannibal
Lucke, Eugene M. ....Hannibal
Malley, John A. ....Quincy, Ill.
Motley, Elliot R. ....Kinderhook, Ill.
Murphy, Bernard L. ....Hannibal
Norton, Harry B. ....Hannibal
Pipkin, Walter D. ....Monroe City
Reichman, John J. ....Hannibal
Roller, Merrill J. ....Hannibal
Salyer, Charles E. ....St. Joseph
Smith, Ulysses S. ....Hannibal
Smith, William Jewell ....Hannibal
Sultzman, Francis E. ....Hannibal
Wachowiak, Marion ....Palmyra
Well, J. W. ....Palmyra

MERCER COUNTY MEDICAL SOCIETY

Bristow, A. S. ....Princeton
Bristow, Robert B. ....Princeton
Duff, Talbot S. ....Cainsville
Lambert, Marion ....Princeton
Laws, Clarence J. ....New York
Perry, John M. ....Princeton
Pickett, Clarence P. ....Princeton
Sellers, C. J. ....Mt. Moriah
Stacy, Emmett W. ....Princeton

MILLER COUNTY MEDICAL SOCIETY

Allee, James W. ....Columbia
Allee, W. L. ....Eldon
Buehler, Carl T., Jr. ....Eldon
Shelton, Edward O. ....Eldon
Walker, Grant D. ....Eldon

MISSISSIPPI COUNTY MEDICAL SOCIETY

Baur, Paul S. ....Cairo, Ill.
Davis, Wilbur L. ....Charleston
Marshall, Alfred H. ....Charleston
Martin, Albert J. ....East Prairie
Presnell, Charles C. ....Charleston
Rolwing, E. Charles ....Charleston
Whitaker, George W. ....East Prairie
Whitaker, Topsy T. H. ....East Prairie

MONITEAU COUNTY MEDICAL SOCIETY

Burke, John P., Jr. ....California
Hume, Harold C. ....Tipton
Kibbe, Edgar A. ....California
Latham, Kenyon S. ....California
Latham, Logan L. ....California
Popejoy, H. R. ....California

MONTGOMERY COUNTY MEDICAL SOCIETY

Andersen, Elmer J. T. ..Montgomery City
Byland, Samuel J. ....Wellsville
Helm, James O. ....New Florence
Hirsch, Albert ....Middletown
Menefee, Buell ....Montgomery City
Rauschelbach, Oscar R. ....Rhineland

MORGAN COUNTY MEDICAL SOCIETY

Gunn, Aubrey J. ....Versailles
Washburn, J. Loren ....Versailles

NEW MADRID COUNTY MEDICAL SOCIETY

Allenstein, B. J. ....New Madrid
Carter, Harvey W. ....Portageville
Ellis, Burnett Eston ....Gideon
Hopkins, F. G. ....Gideon
Husted, George W. ....Parma
Jones, Edward E. ....Lilbourn
Killion, John J. ....Portageville
McRaven, Claude ....Marston
Mullen, Park C. ....Portageville
Popp, Edward M. ....Marston
Sarno, S. M. ....Morehouse
Smith, Louis J. ....New Madrid

NEWTON COUNTY MEDICAL SOCIETY

Bowman, Melvin C. ....Neosho
Cardwell, Clarence ....Stella
Duemler, Rutherford S. ....Seneca
Duemler, Thomas B. ....Seneca
Edmondson, John L. ....Stella
Guthrie, John A. ....Neosho
Lamson, Roy C. ....Neosho
LeHew, Robert M. ....Address Unknown
Lentz, Harold C. ....Neosho
Maness, Charles E. ....Neosho
Reynolds, James R. ....Neosho
Rolens, Louis E. ....Granby
Taylor, Leo T. ....Neosho
Whitehead, Frank F. ....Neosho

NODAWAY-ATCHISON-GENTRY-WORTH COUNTY MEDICAL SOCIETY

Bauman, Henry C. ....Maryville
Bell, Charles T. ....Maryville
Blacklock, David E. ....King City
Bloomer, Joseph A. ....Maryville
Byland, Benjamin F. ....Maryville
Campbell, William S. ....Albany
Cossins, Carlos E. ....St. Joseph
Crowson, Eugene L. ....Pickering
Dean, Leslie E. ....Maryville
Ferguson, R. E. ....Elmo
Haskell, Claude D. ....Tarkio
Humberd, Charles D. ....Barnard
Imes, Elvin D. ....Maryville
Jackson, William R. ....Maryville
Kirk, Charlie W. ....Hopkins
Matteson, Frank B. ....Grant City
Person, Robert C. ....Maryville
Reutter, Garfield A. ....Rockport
Rose, Frank H. ....Albany
Ross, Pren J. ....Grant City
Settle, Charles T. ....Rockport
Settle, Emmett B. ....Rockport
Simpson, Samuel E. ....Stanberry
Wallace, Leo F. ....Stanberry
Waugh, Clifton M. ....Tarkio

NORTH CENTRAL (ADAIR-SCHUYLER-KNOX-SULLIVAN-PUTNAM) COUNTY MEDICAL SOCIETY

Cramb, Arthur B. ....Kirksville
Freeman, Spencer L. ....Kirksville
Gashwiler, J. S. ....Novinger
Gerwig, Henry E. ....Downing
Grim, George E. ....Kirksville
Hart, Pearl Vance ....Coatesville
Henry, Clifford E. ....Kirksville
Herington, Warner ....Green City
Holman, Jurney H. ....Unionville
Humphrey, Henry M. ....Brashear
Luman, Frank E. ....Edina
Miller, Alfred F. ....Knoxville, Tenn.
Miltenberger, Val E. ....Kirksville
Montgomery, Enoch A. ....Unionville
Montgomery, John S. ....Milan
Nulton, Ida May ....Lancaster
Smith, Edward S. ....Kirksville
Stickler, Ralph O. ....Kirksville
Sullivan, William J. ....Philadelphia, Pa.
Wimp, J. J. ....Kirksville

OZARK MEDICAL SOCIETY

Brashear, Charles A. ....Mt. Vernon
Burney, Wallace S. ....Miller
Capetti, Alex P. ....Aurora
Child, Scott P. ....Kansas City
Coffman, Esther E. L. ....St. Louis
Cottrell, Wilson P. ....Reeds Spring
Cowan, R. D. ....Aurora
Dickman, Roy W. ....Mt. Vernon
Donley, Robert R. ....Monett
Edwards, Francis L. ....Pierce City
Evans, Harry Troy ....Branson
Farthing, Robert R. ....Ozark
Ferguson, Lewis H. ....Monett
Ferguson, L. H., Jr. ....St. Louis
Fujikawa, Y. F. ....Mt. Vernon
Glover, Kenneth ....Mt. Vernon
Graves, Arthur J. ....Mt. Vernon
Hargrove, Fred T. ....Springfield
Hellweg, Charles E. ....Address Unknown
Herron, W. Floyd ....Aurora
Holmes, Lemuel I. ....Miller
Holmes, Mansell B. ....Tuscaloosa, Ala.
Holmes, Prince Albert ....Mt. Vernon
Kerr, Homer L. ....Crane
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Roper, Stanley D. .....Ozark
Russell, James M. .....Monett
Shumate, L. St. Clair.....Reeds Spring
Spears, Charles A. .....Billings
Threadgill, Jesse M. .....Forsyth
Wade, James H. .....Ozark
Wasson, Wesley B. .....Nixa
West, William M. .....Monett
Wommack, Fred L. .....Crane
Young, John H. .....Crane

PEMISCOT COUNTY MEDICAL SOCIETY

Aquino, Philip J. .....Caruthersville
Bond, Francis G. .....Hayti
Cain, Charles F. .....Caruthersville
Castles, Charles C. .....Caruthersville
Chapman, J. R. .....Steele
Cook, O. W. .....Caruthersville
Cooper, Lawrence E. .....Cooter
Denton, Levi D. .....Hayti
Limbaugh, Walter R. .....Hayti
Luten, Joseph B. .....Caruthersville
Phipps, George W. .....Caruthersville
Pinion, John R. .....Caruthersville
Roberson, John H. .....Hayti
Shirey, Arnold G. .....Hayti
Taylor, Edward .....Steele

PERRY COUNTY MEDICAL SOCIETY

Bailey, William H. .....Perryville
Bredall, J. J. .....Perryville
Carron, Oscar A. .....Perryville
Feltz, L. W. .....Perryville
Fischer, Theodore .....Altenburg
Miller, Oliver Jerome.....Perryville

PETTIS COUNTY MEDICAL SOCIETY

Beckemeyer, William A. .....Sedalia
Bess, William E. .....Sedalia
Bishop, William T. .....Sedalia
Boger, James W. .....Sedalia
Brady, Charles H. .....Sedalia
Campbell, Albert J. .....Sedalia
Cannady, J. E. .....Sedalia
Carlisle, John B. .....Sedalia
Dyer, David P. .....Sedalia
Edwards, D. R. .....Sedalia
Fogle, Robert L. .....Otterville
Gonser, Karl B. .....Sedalia
Heaton, Asa H. .....Sedalia
Hite, Henry A. .....Green Ridge
Holtzen, Ernst E. .....Smithton
Long, Frank B. .....Sedalia
Mitchell, John E. .....Sedalia
Monroe, Alfred E. .....Sedalia
Morley, Frank R. .....Sedalia
Murray, John Watts .....Sedalia
Osborne, Charles D. .....Sedalia
Parkhurst, Charles L. .....Houstonia
Rhodes, Euhlan L. .....Sedalia
Rodeman, John M. .....Sedalia
Schaefer, Edward H. .....Sedalia
Shy, Milton P. .....Sedalia
Snavely, Edmund C. .....Sedalia
Stauffacher, C. Gordon .....Sedalia
Sweany, R. B. T. .....Sedalia
Titsworth, Guy .....Sedalia
Trader, Charles B. .....Sedalia
Walker, William E. .....LaMonte
Walter, Archie L. .....Sedalia
Wheeler, William M. .....Sedalia

PHELPS-CRAWFORD-DENT-PULASKI COUNTY MEDICAL SOCIETY

Baysinger, S. L. .....Rolla
Breuer, R. E. .....Newburg
Breuer, William N. .....St. James
Buckthorpe, Thelma C. .....Waynesville
Davis, Harry H. .....Rolla
Dillon, William G. .....Salem
Drake, Avery A. .....Rolla
Elders, Frank A., Jr. .....Cuba
Everist, Guy V. .....Rolla
Feind, Earl E. .....Rolla
Hammler, Christiana V. .....St. James
Hart, Martin M. .....Salem
Henson, Lafayette L. .....Bunker
Herzog, Gustav G. A. .....Cuba
Hughes, Edgar O. .....Dixon
Hunt, Lloyd H. .....Salem
Irwin, William F. .....Leasburg
Joseph, George E. .....Salem
Knowles, Roy F. .....Rolla
Lytle, William R. .....Waynesville
McFarland, A. Sidney.....Rolla
Mallette, Cyrus .....Crocker
Miller, Clyde S. .....Waynesville
Myers, James M. .....Rolla
Parker, Rainey C. .....Steelville
Reeves, George W. .....Fulton
Scott, Elijah A. .....St. James
Smith, J. E. .....Rolla
Stricker, Emil A. .....St. James
Underwood, John B. .....St. James
Underwood, Millard K. .....Rolla

PIKE COUNTY MEDICAL SOCIETY

Andrae, Robert L. .....Louisiana
Bankhead, Charles L. .....Paynesville
Barrymore, Eugene.....Bowling Green
Bartlett, Ezekiel M. .....Clarksville
Biggs, James B. .....Bowling Green
Christman, E. E. .....Address Unknown
Cunningham, Eric A. .....Louisiana
Lewellen, Charles H. .....Louisiana
Lewellen, Charles P. .....Louisiana
Pearson, Donnell H. .....Louisiana
Scott, Clive D. .....Louisiana
Treadway, W. W. .....Silex
Wilcoxen, William B. ....Bowling Green

PLATTE COUNTY MEDICAL SOCIETY

Calvert, Lewis C. .....Weston
Durham, Silas L. .....Dearborn
Langford, E. K. .....Platte City
Parker, H. Graham.....Platte City
Robinson, John A. .....Edgerton
Underwood, Johnson .....Parkville
Wilson, Robert P. C. .....Platte City

RAY COUNTY MEDICAL SOCIETY

Buehrer, Cletus E. .....Lawson
Cockrell, John L. .....Richmond
Cook, Thomas F. .....Richmond
Gay, Elmer E. .....Richmond
Goldberg, I. E. .....Braymer
Greene, Luther D. .....Richmond
Shouse, Edwin .....Lawson

ST. CHARLES COUNTY MEDICAL SOCIETY

Barnard, Charles A. ...Portage des Sioux
Behan, Lawrence G. .....O'Fallon
Budke, Robert J. .....St. Charles
Canty, Eugene J. .....St. Charles
Clay, Calvin .....St. Charles
Dyer, John H. .....Warrenton
Hardin, Thomas L. .....St. Charles
Hayden, Ralph O. .....St. Charles
Jenkins, Joseph M. .....St. Charles
Kister, George E. .....St. Charles
McMurray, Herbert C. .....Wentzville
Miller, Ralph N. .....St. Charles
Neubeiser, Ben L. .....St. Charles
Schmidt, William C. .....Augusta
Schneider, Vincent A. .....St. Charles
Schulz, A. P. E. .....St. Charles
Sosaki, George R. .....St. Charles
Towers, Orville W. .....St. Charles

ST. FRANCOIS-IRON-MADISON-WASHINGTON-REYNOLDS COUNTY MEDICAL SOCIETY

Appleberry, Charles H. .....Flat River
Appleberry, Dailey ..... River Mines
Aubuchon, William E. .....Leadwood
Barber, Moses B. .....Fredericktown
Barron, W. Harry.....Fredericktown
Bugg, Andrew F. .....Ellington
Bull, Ben M. .....Ironton
Chilton, John A. .....Address Unknown
Cline, Harold H. .....Piedmont
Crouch, F. Richard.....Farmington
Evans, Albert L. .....Bonne Terre
Foster, Jack Lee.....Desloge
Gaebe, Harold C. .....Desloge
Gale, Frank W. .....Bismarck
Gay, George .....Ironton
Grossman, Marvin .....Fredericktown
Harland, R. E. .....Ironton
Haw, Marvin T., Jr. .....Bonne Terre
Hoctor, Emmett F. .....Farmington
Hunt, John W., Jr. .....Leadwood
Lanzafame, S. Anthony.....Farmington
Likos, Joseph J. .....Webster Groves
Martin, James H. .....Ironton
Nichols, Frank J. .....Farmington
Pyrtle, James R. .....Centerville
Robinson, Bradbury J. .....Farmington
Roebber, Harry M. .....Bonne Terre
Shephard, H. C. .....Flat River
Slaughter, Shelby C. .....Fredericktown
Sutton, Charles E. .....Bonne Terre
Taylor, Van W. .....Bonne Terre
Thurman, Joseph L. .....Potosi
Traubitz, Arnold .....Leadwood
Watkins, George L. .....Farmington
Watkins, George L., Jr. .....Farmington
Yeargain, John P. .....Irondale

STE. GENEVIEVE COUNTY MEDICAL SOCIETY

Clapsaddle, Clare J. .....Ste. Genevieve
Lanning, Richard C. .....Ste. Genevieve
Lanning, Robert W. .....Ste. Genevieve
Sexauer, Arthur E. .....Ste. Genevieve

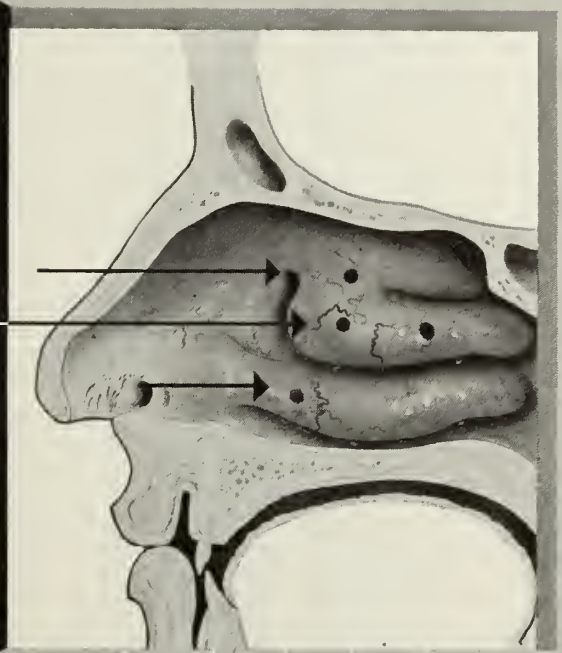
ST. LOUIS MEDICAL SOCIETY

Abel, Oliver, Jr. .....St. Louis
Abell, Walter E. .....St. Louis
Abrams, Hyman S. .....Atlanta, Ga.
Agress, Harry .....St. Louis
Ainsworth, H. Smith.....
.....Colorado Springs, Colo.
Aitken, Louis F. .....St. Louis
Aker, Cecil G. .....St. Louis
Albrecht, Franklin H. .....St. Louis
Alden, Arthur M. .....St. Louis
Alexander, Harry L. .....St. Louis
Alford, Leland B. .....St. Louis
Allen, Duff S. .....St. Louis
Allen, Henry C. .....St. Louis
Allen, Hollis N. .....St. Louis
Allen, Willard M. .....St. Louis
Althans, Carl .....St. Louis
Althaus, Carl J. .....St. Louis
Altheide, J. Paul .....St. Louis
Alvis, Bennett Y. .....St. Louis
Alvis, Edmund B. .....St. Louis
Ambrose, Olney A. .....St. Louis
Anderson, Charles A. .....Warren, Ohio
Anderson, DeWayne C. ....Stanhope, Ia.
Andrews, Raleigh K. .....St. Louis
Anschuetz, Robert R. .....St. Louis
Anstay, George.....St. Louis
Arbuckle, Millard F. .....St. Louis
Arneson, A. N. .....St. Louis
Arney, William G. .....St. Louis
Arnold, Eugene L. .....St. Louis
Aronberg, Lawrence M. .....St. Louis
Arthur, John M. ...Camp Edwards, Mass.
Arzt, Franz .....St. Louis
Atherton, Herbert R. ..East St. Louis, Ill.
Atkinson, William J., Jr. .....St. Louis
AufderHeide, G. Russell.....St. Louis
Ayars, Treston R. .....St. Louis
Bagby, James W. .....St. Louis

Bailey, Frank A. ..... St. Louis
Bailey, Fred W. ..... St. Louis
Baker, Cecil H. ..... St. Louis
Baker, William M. ..... St. Louis
Baldree, Charles E., Jr. ..... St. Louis
Baltrusch, Oscar W. ..... Vancouver, Wash.
Bardenheier, J. Phil ..... St. Louis
Barger, John A. ..... Melbourne, Fla.
Barker, Jess W. ..... St. Louis
Barnes, Percival C. ..... St. Louis
Baron, William ..... St. Louis
Barrett, Ralph M. S. ..... St. Louis
Bartels, Leo ..... St. Louis
Bartlett, Robert W. ..... St. Louis
Bartlett, Willard ..... St. Louis
Bartlett, Willard, Jr. ..... St. Louis
Bartnick, Mitchel L. ..... St. Louis
Barton, Henry R. ..... Address Unknown
Bassett, Robert B. ..... St. Louis
Bates, George C. ..... Jefferson City, Mo.
Batts, Jett McC. ..... St. Louis
Bauer, Joseph A. ..... St. Louis
Bauer, Louis ..... St. Louis
Bauman, Charles M. ..... St. Louis
Baumgarten, Walter, Jr. ..... St. Louis
Beam, Sim F. ..... Brentwood
Beare, J. Byron ..... St. Louis
Beasley, L. Kenneth ..... St. Louis
Becke, William G. ..... St. Louis
Becker, Edward J. ..... St. Louis
Becker, George H. ..... St. Louis
Becker, George W. ..... St. Louis
Beckette, Edmund S. ..... Chicago
Beckham, Genevieve S. ..... St. Louis
Beers, Robert G. ..... Marshfield
Behrens, Louis H. ..... St. Louis
Beisbarth, Albert ..... St. Louis
Beisbarth, Carl C. ..... St. Louis
Bell, Robert M. ..... St. Louis
Benincasa, Anthony V. ..... St. Louis
Benjamin, Durand ..... St. Louis
Berard, Louis N. ..... St. Louis
Berg, Ralph ..... St. Louis
Berger, Edward J. ..... St. Louis
Bergman, Hugo F. ..... St. Louis
Bergner, Grace E. ..... St. Louis
Berland, Harry I. ..... St. Louis
Berman, Joseph P. ..... St. Louis
Berman, William ..... St. Louis
Bersche, Bertram L. ..... St. Louis
Bess, George C. ..... St. Louis
Bieri, Earl J. ..... St. Louis
Bierman, Max John ..... Normandy
Bilsky, Nathan ..... St. Louis
Bina, Albert F. ..... St. Louis
Bindbeutel, Arthur H. ..... St. Louis
Birdsall, Thomas C. ..... St. Louis
Birsner, Louis J. ..... St. Louis
Bisno, Daniel ..... St. Louis
Black, James M. ..... St. Louis
Black, William D. ..... St. Louis
Blair, Vilray P. ..... St. Louis
Bleyer, Adrien ..... St. Louis
Bock, L. H. ..... St. Louis
Bockelman, Clifford H. ..... St. Louis
Boedeker, Roy V. ..... St. Louis
Boemer, Irving H. ..... St. Louis
Boemer, L. C. ..... St. Louis
Bohannon, Burton ..... St. Louis
Bohne, William R. ..... St. Louis
Bohrer, Harry C. ..... St. Louis
Bosse, Edwin H. ..... St. Louis
Bottom, Donald S. ..... St. Louis
Bowdern, Edward H. ..... St. Louis
Bowerman, Harold H. ..... St. Louis
Bowersox, Warren A. ..... St. Louis
Boyd, Arthur M. ..... St. Louis
Bradley, Arthur H. ..... St. Louis
Bradley, Frank R. ..... St. Louis
Bradley, John Martin ..... St. Louis
Bredeck, Joseph F. ..... St. Louis
Bremser, Harry L. ..... St. Louis
Brennan, J. Anthony ..... St. Louis
Brennan, Robert V. ..... St. Louis
Britt, Robert E. ..... St. Louis
Brockelmann, Emmy Ross ..... St. Louis
Brockelmann, Erich ..... St. Louis
Broeder, William H. ..... St. Louis
Bromberg, Leon ..... St. Louis
Brookes, Henry S., Jr. ..... St. Louis
Brookes, Robert D. ..... St. Louis
Brookes, Theodore P. ..... St. Louis
Brooks, Arthur C. ..... St. Louis
Broun, Goronwy O. ..... St. Louis
Brown, Arthur C. F. ..... St. Louis
Brown, Clyde O. ..... St. Louis
Brown, E. Eugene ..... St. Louis
Brown, James B. ..... St. Louis
Brown, James M. ..... Long Beach, Calif.
Brown, Seymour ..... St. Louis
Bryan, James H. ..... St. Louis
Bryan, William T. K. ..... St. Louis
Bublis, Norbert J. ..... St. Louis
Buddy, E. P. ..... St. Louis
Buhman, Rudolph ..... St. Louis
Bulger, Harold A. ..... St. Louis
Burford, Cyrus E. ..... St. Louis
Burford, E. Humber ..... St. Louis
Burns, Francis J. ..... St. Louis
Burns, Stanley S. ..... St. Louis
Burst, Donald O. ..... Kirkwood
Burst, Emil A. ..... St. Louis
Busch, Anthony K. ..... St. Louis
Busse, Ewald W. ..... Denver, Colo.
Byars, Louis T. ..... St. Louis
Byrns, Robert E. ..... St. Louis
Calhoun, James G. ..... St. Louis
Calkins, Delevan ..... St. Louis
Callahan, William P., Jr. ..... Wichita, Kan.
Cameron, Solon ..... St. Louis
Campbell, Cecil S. ..... St. Louis
Cannon, Edward M. ..... St. Louis
Cappel, Powel B. ..... St. Louis
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Carney, Joseph E. ..... St. Louis
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Carroll, Grayson ..... St. Louis
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Cason, Elbert H. ..... St. Louis
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Cassidy, Leslie D. ..... St. Louis
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Charles, Benjamin H. ..... St. Louis
Charles, Cecil M. ..... St. Louis
Charles, Joseph W. ..... St. Louis
Charnas, Raymond M. ..... St. Louis
Chopin, George F. ..... St. Louis
Ciapciak, Stanley J. ..... St. Louis
Clancy, James F. ..... St. Louis
Clapp, Roger W. ..... St. Louis
Claridge, Ralph A. ..... St. Louis
Clark, Clarence L. ..... St. Louis
Clark, J. Fred W. ..... St. Louis
Cleary, Frank ..... St. Louis
Cleveland, Andrew H. ..... St. Louis
Cleveland, Horace F. ..... St. Louis
Clithero, W. Harvey ..... St. Louis
Coates, Thomas A. ..... St. Louis
Coffin, Ernest L. ..... St. Louis
Cohen, Frank ..... St. Louis
Cohen, Louis ..... St. Louis
Coller, Frederick C. ..... Danville, Ill.
Connor, John J. ..... St. Louis
Conrad, Adolph H. ..... St. Louis
Conrad, Adolph H., Jr. ..... St. Louis
Conrad, Marshall B. ..... Danville, Ill.
Conway, Francis ..... St. Louis
Cook, James T. ..... St. Louis
Cook, Jerome E. ..... St. Louis
Cook, Ralph L. ..... St. Louis
Cook, Robert J. ..... Brentwood
Cooper, Henry T. ..... St. Louis
Cooper, Raymond G. ..... Penns Grove, N. J.
Copher, Glover H. ..... St. Louis
Cordonnier, Justin ..... St. Louis
Cornell, John C. ..... St. Louis
Correnti, Nicholas A. ..... St. Louis
Cory, Harriet Stevens ..... St. Louis
Costello, Cyril J. ..... St. Louis
Costello, Joseph P. ..... St. Louis
Costello, Joseph P., Jr. ..... St. Louis
Costen, James B. ..... St. Louis
Coughlin, Bertrand D. ..... St. Louis
Creane, John C. ..... St. Louis
Crego, Clarence H., Jr. ..... St. Louis
Crites, John L. ..... St. Louis
Cron, Heinz E. ..... Clayton
Cross, Glen O. ..... San Francisco, Calif.
Crossen, Harry S. ..... St. Louis
Crossen, Robert J. ..... St. Louis
Crossman, Robert W. ..... St. Louis
Crowe, John T. ..... New York
Cummings, James H. ..... St. Louis
Cutler, Harold M. ..... St. Louis
Cutler, Harry ..... St. Louis
Daake, John W. ..... St. Louis
Dahms, Gustave ..... St. Louis
Dalton, Arthur R. ..... St. Louis
Dalton, Michael Henry ..... St. Louis
Daman, George A. ..... St. Louis
Danis, Peter G. ..... St. Louis
Davie, Joseph ..... St. Louis
Davis, Edgar W. ..... Given, Ia.
Davis, Frank L. ..... St. Louis
Davis, Frank L., Jr. ..... St. Louis
Davis, Martin W. ..... Cape Girardeau
Davis, Myron W. ..... St. Louis
Davis, Thomas M. ..... St. Louis
Day, Anthony B. ..... St. Louis
Deakin, Rogers ..... St. Louis
Dean, Lee Wallace, Jr. ..... St. Louis
de la Torre, John J. ..... Sullivan, Mo.
Demko, Frank ..... St. Louis
Demko, William ..... St. Louis
Denk, Albert A. ..... St. Louis
DePew, Heber B. ..... St. Louis
Deppe, Arthur H. ..... St. Louis
Deutch, Max ..... St. Louis
Devereux, James A. ..... Jefferson Barracks
Devine, John B. ..... St. Louis
Dickson, James A. ..... St. Louis
Diehr, Alvin H. ..... St. Louis
DiLeo, Senatro W. ..... St. Louis
Dmytryk, Eugene T. ..... St. Louis
Dobbs, Otto R. ..... St. Louis
Donnell, George N., San Francisco, Calif.
Dorsett, E. Lee ..... St. Louis
Doubek, John C. ..... St. Louis
Doyle, Charles R. ..... St. Louis
Doyle, Raymond E. ..... St. Louis
Doyle, William J. ..... St. Louis
Drace, Charles C. ..... St. Louis
Drace, Charles C., Jr. ..... St. Louis
Drake, Truman G. ..... St. Louis
Drescher, Emmett B. ..... St. Louis
Drews, Leslie C. ..... St. Louis
Drey, Norman W. ..... St. Louis
Dripps, Roy C. ..... St. Louis
Drum, Clarence G. ..... St. Louis
Duden, Charles W. ..... St. Louis
Duemler, John H. ..... St. Louis
Dugan, Lawrence J. ..... Maplewood
Dulick, Michael ..... St. Louis
Dunn, Edward H. ..... Richmond Heights
Dworkin, Saul ..... St. Louis
Dyer, Dallas J. ..... St. Louis
Eades, Dee W. ..... St. Louis
Earp, Ralph K. ..... St. Louis
Eber, Carl T. ..... St. Louis
Echterhoff, Harry R. ..... St. Louis
Eck, Peter A. ..... St. Louis
Eckert, Charles L. ..... St. Louis
Eckert, Clarence T. ..... St. Louis
Ecklund, Archibald M., Mare Island, Calif.
Edele, Eugene H. ..... St. Louis
Edwards, Edwin D. ..... St. Louis
Edwards, Joseph C. ..... St. Louis
Egley, Loren E. ..... St. Louis
Ehlers, Charles W. ..... St. Louis
Ehresmann, J. J. ..... Carrollton, Ill.
Eidelman, J. Robert ..... St. Louis
Eidmann, Walter P. ..... St. Louis
Eigel, Edwin G. ..... St. Louis
Eimer, Charles E. ..... St. Louis
Eisele, Matthew B. ..... East St. Louis, Ill.
Ellersieck, Dorothy M. ..... St. Louis
Elman, Robert ..... St. Louis
Elmer, Warren P. ..... St. Louis
Elz, Jule T. ..... St. Louis
Emmert, Frederick V. ..... St. Louis
Engleman, Reinhold ..... Denver, Colo.
English, Milton T., Jr. ..... Kirksville
Engman, Martin F. ..... St. Louis
Engman, Martin F., Jr. ..... St. Louis
Epp, George J. ..... St. Louis
Ernst, Edwin C. ..... St. Louis
Ernst, Edwin C., Jr. ..... Rochester, Minn.
Ernst, Roland P. ..... Augusta, Ga.
Eskeles, Irwin H. ..... St. Louis
Esslinger, Arthur T. ..... St. Louis
Eto, Jackson ..... St. Louis
Eversoll, Norton J. ..... St. Louis
Ewerhardt, F. H ..... St. Louis
Eyermann, Charles H. ..... St. Louis
Falk, O. P. J. ..... St. Louis
Farley, William W. ..... St. Louis
Farrar, John T. ..... Greenville, S. C.
Farrell, Robert J. ..... St. Louis
Farris, William Walker ..... St. Louis
Feinstein, Leon A. ..... St. Louis
Feller, Harold H. ..... St. Louis
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Ferris, David P. ..... St. Louis
Ferris, Joseph L. ..... St. Louis
Fessenden, E. M. ..... St. Louis
Fineberg, Maxwell ..... St. Louis
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Fischer, Erich ..... St. Louis
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Fleishman, Alfred ..... St. Louis
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Flynn, Joseph E. ..... St. Louis
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Foster, Leon ..... St. Louis
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Freund, Samuel J. ..... St. Louis
Friedman, Bernard ..... Koch, Mo.
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Funsch, Robert E. ..... St. Louis
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Goldman, Lawrence ..... St. Louis
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Hanser, Theodore H. ..... St. Louis
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Klippel, Edward T. ..... St. Louis
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Kneal, Ellsworth ..... St. Louis
Knese, Luke A. ..... St. Louis
Knight, William A. ..... St. Louis
Knight, William A., Jr. ..... St. Louis
Knoke, Frederick William, Jr. .....
..... Grosse Pointe Park, Mich.
Koeb, Roland A. ..... St. Louis
Koenig, George H. ..... St. Louis
Koenig, Karl F. ..... St. Louis
Koessel, Arthur William ..... St. Louis
Kohler, Eugene J. ..... St. Louis
Kohler, Louis H. ..... St. Louis
Koon, Bernard T. ..... St. Louis
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Pelz, Mort D. ..... St. Louis
Penney, David L. ..... St. Louis
Pernoud, F. G. ..... St. Louis
Pernoud, F. G., Jr. ..... St. Louis
Pernoud, Michael F. ..... Greenville, S. C.
Peters, Augustus W. ..... St. Louis
Pfeifer, Oliver C. ..... St. Louis
Phelan, Emma ..... St. Louis
Pickrell, Claude D. ..... St. Louis
Piekarski, Anthony A. ..... St. Louis
Pieper, Henry G. ..... St. Louis
Pitzman, Marsh ..... St. Louis
Plag, Albert F. ..... St. Louis
Ploch, Bernard ..... St. Louis
Ploehn, Emma ..... St. Louis
Plumpe, Tupper ..... St. Louis
Poe, John S. ..... New York
Pollack, Max ..... St. Louis
Pollock, Ellis L. ..... St. Louis
Portuondo, Bonaventura C. ..... St. Louis
Post, Lawrence T. ..... St. Louis
Post, M. Hayward ..... St. Louis
Potashnick, Robert ..... St. Louis
Pote, Thomas B. ..... St. Louis
Potter, Allen B. ..... St. Louis
Powell, Carl A. ..... St. Louis
Powell, Earl A. ..... St. Louis
Powell, Rudolph V. ..... St. Louis
Powers, Pierce W. ..... St. Louis
Pranger, Sylvester H. ..... St. Louis
Presnell, Cleitus A. ..... St. Louis
Press, Maurice J. ..... St. Louis
Probstein, Jacob G. ..... St. Louis
Proetz, Arthur W. ..... St. Louis
Pruett, Burchard S. ..... St. Louis
Pruett, Daniel S. ..... St. Louis
Pruett, Hubert S. ..... St. Louis
Puckett, Charles L. ..... St. Louis
Puckett, Cordelia ..... St. Louis
Pulliam, M. J. ..... St. Louis
Purcell, Harry K. ..... St. Louis
Pyne, Herbert S. ..... St. Louis
Quarles, E. Bryan ..... St. Louis
Quinn, Abram T. ..... St. Louis
Quirin, Warren S. ..... St. Louis
Raemdonck, Alphonse J. ..... St. Louis
Raitt, Grant P. ..... Billings, Mont.
Ramos, Raoul L. ..... St. Louis
Rassieur, Louis ..... St. Louis
Ray, Richard H. ..... St. Louis
Ready, James H. ..... St. Louis
Reh, Edward P. ..... St. Louis
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Reiches, Aaron J. ..... St. Louis
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Reis, Carl J. ..... St. Louis
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Reuter, Louis A. ..... St. Louis
Reynolds, Fred ..... St. Louis
Rice, Earl R. ..... St. Louis
Rich, George T. ..... St. Louis
Richman, Elmer ..... St. Louis
Ries, Douglas A. ..... St. Louis
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Riley, William H. ..... St. Louis
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Rothman, Paul M. ..... St. Louis
Rotter, Julius C. ..... St. Louis
Rouse, David M. ..... LaBelle, Mo.
Rowland, Willard D. ..Address Unknown
Royston, G. D. ..... St. Louis
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Ruhling, Rudolf ..... St. Louis
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Runde, F. William ..... St. Louis
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Ryan, Linus M. ..... St. Louis
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Sachar, Leo A. ..... St. Louis
Sachs, Ernest ..... St. Louis
St. John, Dewey ..... St. Louis
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Sale, Llewellyn, Jr. ..... St. Louis
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Sandperl, Harry ..... St. Louis
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Sassin, Edmond F. ..... St. Louis
Satterfield, Val B. ..... St. Louis
Sauer, Dean ..... St. Louis
Sauer, William E. ..... St. Louis
Sausville, Albert J. ..... St. Louis
Saxton, John A., Jr. ..... St. Louis
Schaaf, Katherine M. ..... St. Louis
Schafer, Joseph C. ..... St. Louis
Schechter, Samuel E. ..... Chicago
Scheff, Harold ..... St. Louis
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Scherrer, Fred W., Jr. ..... St. Louis
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Schisler, Edwin J. ..... St. Louis
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Schluer, Elmer P. ..... St. Louis
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Schmiemeier, Roy H. ..... St. Louis
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Schoetker, George H. ..... St. Louis
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Schuchat, W. Louis ..... St. Louis
Schuck, Philip ..... St. Louis
Schulein, Vernon E. ..... St. Louis
Schumacher, Cyril W. ..... St. Louis
Schwartz, Frederick O. ..... St. Louis
Schwartz, Henry G. ..... St. Louis
Schwartzmann, John R. ..... St. Louis
Sciortino, Gaspare ..... St. Louis
Sciortino, John S. ..... St. Louis
Scobee, Richard G. ..... St. Louis
Scopelite, Joseph A. ..... St. Louis
Scott, Elwin P. ..... St. Louis
Scott, Wendell G. ..... St. Louis
Seddon, John W. ..... St. Louis
Seelig, Major G. ..... Atherton, Calif.
Seib, George A. ..... St. Louis
Senseney, Eugene T. ..... St. Louis
Senturia, B. H. ..... St. Louis
Senturia, Hyman R. ..... St. Louis
Sertl, John D. ..... St. Louis
Sevin, Omar R. ..... St. Louis
Sewing, Arthur H. ..... St. Louis
Sexton, Daniel L. ..... St. Louis
Sexton, Elmer E. ..... St. Louis
Shackelford, H. H. ..... St. Louis
Shahan, Philip T. ..... St. Louis
Shahan, William E. ..... St. Louis
Shaner, John F. ..... St. Louis
Shanklin, Benjamin ..... St. Louis
Sheedy, John A. ..... Battle Creek, Mich.
Sheets, John S. ..... St. Louis
Sheets, Martin E. ..... St. Louis
Shelton, Harold J. ..... St. Louis
Sheridan, Edmund R. ..... St. Louis
Sherwin, Charles F. ..... St. Louis
Sherwin, Charles S. ..... St. Louis
Shrader, E. Lee ..... St. Louis
Shreffler, A. R. ..... St. Louis
Shutt, Cleveland H. ..... St. Louis
Shy, James C. ..... St. Louis
Siddall, H. Stewart ..... Alton, Ill.
Siebert, Walter J. ..... St. Louis
Sievers, Edward F. ..... St. Louis
Signorelli, Andrew J. ..... St. Louis
Simon, Jerome I. ..... St. Louis
Simon, Selig ..... St. Louis
Simpson, Eber ..... St. Louis
Simpson, Guy ..... St. Louis
Sinner, Bernard L. ..... St. Louis
Skeffington, Mary Jane ..... St. Louis
Smit, William M. ..... St. Louis
Smith, B. F., Jr. ..... St. Louis
Smith, Dudley R. ..... St. Louis
Smith, Frank John ..... St. Louis
Smith, George P. ..... St. Louis
Smith, Herbert P. ..... St. Louis
Smith, Hugh R. ..... St. Louis
Smith, James M. ..... St. Louis
Smith, J. Earl ..... St. Louis
Smith, John R. ..... St. Louis
Smith, Milton ..... St. Louis
Smith, Oda O. ..... St. Louis
Smith, Reuben M. ..... St. Louis
Smith, Robert M. ..... St. Louis
Smith, Warren F. ..... St. Louis
Smolik, Edmund A. ..... St. Louis
Snyder, Edward N. ..... St. Louis
Soper, Horace W. ..... St. Louis
Soule, Samuel D. ..... St. Louis
Spain, Kate C. ..... St. Louis
Spencer, Selden ..... St. Louis
Spinzig, Edgar W. ..... St. Louis
Spivy, Raymond M. ..... St. Louis
Spoeneman, Walter H. ..... St. Louis
Stahl, P. D. ..... St. Louis
Stanbro, William W. ..Washington, D. C.
Stanze, Frank J. ..... St. Louis
Starkloff, Gene B. ..... St. Louis
Starkloff, Max ..... St. Louis
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Steele, Harol ..... St. Louis
Stein, Arthur W. ..... St. Louis
Steinberg, Franz U. ..... St. Louis
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Stevens, Robert W. ..... St. Louis
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Stindel, Charles E. ..... St. Louis
Stolar, Jacob ..... St. Louis
Stone, Charles A. ..... St. Louis
Stone, Edna M. ..... St. Louis
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Striegel, B. F. ..... St. Louis
Stroud, C. Malone ..... St. Louis
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Stryker, Garold V. ..... St. Louis
Stubbs, James B. ..... St. Louis
Stude, William Carl ..... St. Louis
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Thomas, Peter ..... St. Louis
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Treiman, Robert C. ..... St. Louis
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Trigg, Joseph F. ..... St. Louis
Tripodi, Anthony M. ..... Tacoma, Wash.
Turner, Rush ..... St. Louis
Tuthill, Sanford W. ..... Alexandria, La.
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Tyzzer, Robert N. ..... San Diego, Calif.
Uhlemeyer, Henry A. ..... St. Louis
Uhlemeyer, Henry A., Jr. ..... St. Louis
Uhrich, Gerard I. ..... St. Louis
Unterberg, Hillel ..... St. Louis
Urban, Emanuel T. ..... St. Louis
Vandover, John T. ..... St. Louis
Van Vranken, Eugene E. ..... St. Louis
Vatterott, Paul B. ..... St. Louis
Vaughan, J. Russell ..... St. Louis
Vaughan, John R. ..... St. Louis
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Verda, Dominic J. ..... St. Louis
Vezeau, Stephen ..... St. Louis
Virant, John A. ..... St. Louis
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Vicona, Stefano ..... St. Louis
Vogel, Eugene A. ..... St. Louis
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Vohs, Carl F. ..... St. Louis
Von Kaenel, Joseph E. ..... St. Louis
Vournas, Christopher G. ..... St. Louis
Wachenfeld, Carl H. ..... St. Louis
Wachter, Harry E. ..... St. Louis
Wade, James P. ..... St. Louis
Wagenbach, William F. ..... St. Louis
Wallace, Edgar S. ..... Potosi
Walters, William H. ..... St. Louis
Walton, Franklin E. ..... St. Louis
Warner, Robert G. ..... St. Louis
Wasserman, Helman C. ..... St. Louis
Wattenberg, Carl A. ..... St. Louis
Wayland, Thomas A. ..... St. Louis
Webb, Lewis M. ..... St. Louis
Webb, Marion A. ..... St. Louis
Webb, Paul K. ..... St. Louis
Weber, Eugene P. ..... St. Louis
Weber, Sol ..... St. Louis
Wedig, John H., Jr. ..... Alton, Ill.
Wegner, Carl R. ..... St. Louis
Weiler, Thomas J. ..... St. Louis
Weinel, Francis G. ..... St. Louis
Weinsberg, Charles H. ..... St. Louis
Weinsberg, William C. ..... St. Louis
Weintraub, Solomon A. ..... St. Louis
Weir, Don C. ..... Arnold
Weir, Royal A. ..... St. Louis
Weis, Matthew W. ..... St. Louis
Weiss, Richard S. ..... St. Louis
Weiss, William ..... St. Louis
Weiterer, Herman L. ..... St. Louis
Welborn, William S. ..... St. Louis
Welch, Hooper W. ..... St. Louis
Welsh, Laurence C. ..... St. Louis
Wennerman, Sam F. ..... St. Louis
Wentzel, Louis R. ..... St. Louis
Wenzel, Peter S. ..... St. Louis
Werner, August A. ..... St. Louis
Werner, William A. ..... St. Louis
Westerman, Henry C. ..... St. Louis
Westlake, Samuel B. ..... St. Louis
Westphaelinger, Henry F. ..... St. Louis
Weyerich, Leon F. ..... St. Louis
White, Charles A. ..... St. Louis
White, Orville O. ..... St. Louis
White, Park J. ..... St. Louis

White, T. Wistar ..... St. Louis
White, W. H. ..... St. Louis
White, W. H., Jr. ..... St. Louis
Wiatt, William S. ..... St. Louis
Wiegand, Herbert C. ..... Clayton
Wiener, Meyer ..... Coronado, Calif.
Wiese, Harry W. ..... St. Louis
Wilcox, Claude V. ..... St. Louis
Wild, Aloysius A. ..... St. Louis
Wilhelmi, Otto J. ..... St. Louis
Will, Leo A. ..... St. Louis
Williams, Ray D. ..... St. Louis
Williamson, Walter E. ..... St. Louis
Wilson, Keith S. ..... St. Louis
Wilson, Kenneth O. ..... St. Louis
Wilucki, Leo E. ..... St. Louis
Wilucki, Melvin R. ..... St. Louis
Wimber, Thomas C. ..... St. Louis
Winterer, Roland A. ..... Affton, Mo.
Wippo, Edgar W. ..... St. Louis
Wissner, Seth ..... St. Louis
Wittwer, Hugh J. ..... St. Louis
Womack, Nathan A. ..... St. Louis
Wood, Bennett R. ..... St. Louis
Wood, Harold ..... St. Louis
Wood, V. Visscher ..... St. Louis
Wood, William George ..... St. Louis
Woodruff, Frederick E. ..... St. Louis
Woolsey, Robert D. ..... St. Louis
Wotawa, William J. ..... St. Louis
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Yanow, Mitchel ..... St. Louis
Young, Leo P. ..... St. Louis
Young, Lillian V. ..... St. Louis
Younger, Jesse ..... Long Island, N. Y.
Youngman, George A. ..... St. Louis
Zahorsky, John ..... Steelville, Mo.
Zahorsky, Theodore S. ..... St. Louis
Zahtz, Hyman ..... St. Louis
Zeinert, Oliver B. ..... St. Louis
Zeitler, William T. ..... St. Louis
Zentay, Paul J. ..... St. Louis
Ziegelmeyer, John S. ..... St. Louis
Zillgitt, George H. ..... St. Louis
Zingale, Frank G. ..... St. Louis
Zink, Oscar C. ..... St. Louis
Zwart, Claude H. ..... St. Louis

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Barnes, Francis M. ..... St. Louis
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Bernstorff, Paul H. ..... St. Louis
Berwald, Irwin I. ..... University City
Bishop, Mary M. ..... St. Louis
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Bortnick, Arthur R. ..... University City
Bosserman, David C. ..... Elsa, Tex.
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Breckenridge, Elmer O. ..... Maplewood
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Brown, Thomas K. ..... St. Louis
Brown, William S. ..... St. Louis
Brown, Wilson G. ..... Kirkwood
Brownton, Sheldon S. .Address Unknown
Burford, Thomas H. ..... University City
Canepa, Francis J. ..... St. Louis
Canepa, John B. ..... St. Louis
Clark, Richard G. ..... St. Louis
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Coldwater, Kenneth B., Jefferson Barracks
Coleman, William G. ..... St. Louis
Colgate, Cleon E. ..... Amarillo, Texas
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Cone, Alfred J. ..... Chesterfield
Cooke, Jean V. ..... St. Louis
Corley, Henry N. ..... St. Louis
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Darrow, Arthur C. ..San Fernando, Calif.
Davidson, Morris ..... St. Louis
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Diehr, Maurice, A. ..... St. Louis
Dill, Foster A. ..... Maplewood
Dowd, James F., Jr. ..... Address Unknown
Dyer, C. P. ..... St. Louis
Ellison, Leroy E. ..... Maplewood
Elson, Julius ..... University City
Emery, Edgar V. N. ..... St. Louis
Evans, Emery E. ..... St. Louis
Farris, H. G. ..... St. Louis
Fingert, H. H. ..... St. Louis
Finley, Freeman L. ..... Overland
Flynn, George W. ..... Clayton
Forsman, Waldo W., Jr. ..... St. Louis
Foster, Robert L. ..... St. Louis
Fredericks, Edward L. .Address Unknown
Froelich, Edwin J. ..... St. Louis
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Gage, Helen L. B. ..... Webster Groves
Gaines, Quentin M. ..... Kirkwood
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Gebert, Clara M. ..... Valley Park
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Goodrich, Harold A. ..... Webster Groves
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Hamtil, Edward W. ..... St. Louis
Hanlon, Thomas J. ..... St. Louis
Hans, Willard J. ..... St. Louis
Hardy, Guerdan ..... University City
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Hayward, John D. ..... St. Louis
Heideman, Milo L. ..... St. Louis
Helbing, Edward J. ..... St. Louis
Hendin, Aaron ..... St. Louis
Hengen, Henry E. ..... Pattonville
Hertel, Albert L. ..... St. Louis
Hobbs, Alonzo G. ..... St. Louis
Hobbs, Clarence L. ..... St. Louis
Hobbs, John E. ..... St. Louis
Hofsommer, Armin C. ..... Webster Groves
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Howe, Louis F. ..... Brentwood
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Jones, Garnett ..... St. Clair
Jones, James B. ..... Brentwood
Kelley, Walter L. ..... Affton
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Kessler, Joseph J. ..... St. Louis
Kingsland, Robert C. ..... Clayton
Klinkerfuss, George H. ..... St. Louis
Kloecker, Herman J. ..... Overland
Kloeppel, Carl F. ..... Kirkwood
Koch, Otto W. ..... St. Louis
Koch, Robert E. ..... Clayton
Konzelman, John A. ..... St. Louis
Kuritz, Albert B. ..... St. Louis
Lerner, Abe F. ..... University City
Leslie, Charles H. ..... Kirkwood
Levey, Simon A. ..... St. Louis
Levin, M. J. ..... Brentwood
Loving, B. Rush ..... Ballwin
Luckey, Horace L. ..... Maplewood
McAllister, Max F. ..... Kirkwood
McCarthy, Thomas D. ..... Lemay
McLean, Royal C. ..... Kirkwood
McNearney, Joseph ..... St. Louis
McShane, Quentin W. ..... St. Louis
Magidson, Joseph ..... Clayton
Magness, Guy N. ..... University City
Marcus, Morris D. ..... St. Louis
Marmor, William A. ..... St. Louis
May, Benjamin F. ..... St. Louis
Meador, James R. ..... Clayton
Mendonsa, Elsa L. ..... University City
Meyer, Theodore R. ... Address Unknown
Moore, Harry G. ..... St. Louis
Moore, William E. ..... Normandy
Morse, Frank L. ..... St. Louis
Myers, Daniel W. .... Address Unknown
Nakada, James R. ..... St. Louis
Nash, W. Hampton ..... St. Louis
Niederwimer, John ..... Koch
North, William R. ..... Webster Groves
Nussbaum, Robert A. ..... St. Louis
Obrock, Louis C. ..... St. Louis
O'Connell, John ..... Overland
Ott, Harold J. ..... Maplewood
Owens, Bert O. ..... St. Louis
Ozias, Charles R. ..... Kansas City
Paddock, Richard ..... St. Louis
Park, George M. ..... Eureka
Parman, David R. ..... University City
Passanante, Bartholomew M. ... St. Louis
Pawol, S. E. ..... St. Louis
Peters, Arthur J. ..... St. Louis
Petersen, Fenton J. ..... St. Louis
Phillips, Hanford ..... St. Louis
Prichard, Joseph A. ..... Overland
Proud, G. O'Neil ..... St. Louis
Reese, A. Victor ..... Webster Groves
Reilly, Pierce J. ..... St. Louis
Reinhard, E. H. ..... Webster Groves
Richtarsic, Stephen R. ..... St. Louis
Roberts, John R. ..... Brentwood
Robinson, Edith C. ..... St. Louis
Robinson, Ralph D. ... Address Unknown
Rogers, C. H. ..... St. Louis
Rogers, John Asa ..... University City
Rose, William F. ..... Jefferson Barracks
Rosenberg, Henry E. ..... St. Louis
Rosenberger, Charles F. ..... St. Louis
Roufa, Joseph F. ..... St. Louis
Rupe, Wayne A. ..... St. Louis
Rutledge, Paul E. ..... Kirkwood
Ryan, John J. ..... Clayton
Salisbury, William J. ..... Vigus
Sanders, Clifford E. ... Richmond Heights
Schattyn, John Martin ..... St. Louis
Scheele, M. H. ..... University City
Schmidt, Edmund M. ..... St. Louis
Schultz, Samuel ..... St. Louis
Schwartz, Alfred S. ..... St. Louis
Schwartzman, Bernard ..... St. Louis
Scott, Henry F. ..... Address Unknown
Seabaugh, Ottis D. ..... Webster Groves
Selle, Harold C. ..... St. Louis
Sharp, Cecil A. Z. ..... Clayton
Shaver, Nellie A. ..... St. Louis
Shepherd, Charles T. ..... Clayton
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Skilling, David M., Jr. ..... St. Louis
Skinner, John Spalding ..... Clayton
Smit, Herbert M. ..... St. Louis
Smith, William Alexander. Webster Groves
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Townsend, William H. ..... Maplewood
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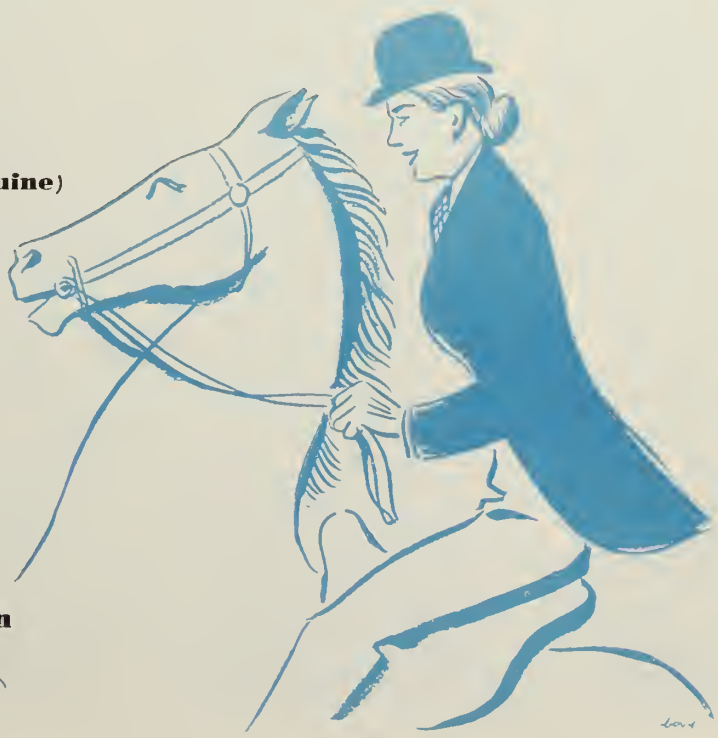
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Cavender, Savino W. ..... Ft. Benning, Ga.
Chamberlain, Gilbert L. ..... New Franklin
Chambers, James Q., Jr. ..... Kansas City
Chandler, John F. ..... Oregon
Chapman, J. R. ..... Steele
Chappell, Frances M. ..... St. Louis
Charles, Benjamin H. ..... St. Louis
Charles, Cecil M. ..... St. Louis
Charles, Joseph W. ..... St. Louis
Charnes, Raymond M. ..... St. Louis
Cheek, William C. ..... Springfield
Chenoweth, J. A. ..... Joplin
Chiarottino, Joseph F. ..... St. Joseph
Chiasson, E. Chaille ..... Columbia
Child, Scott P. ..... Kansas City
Chilton, James C. ..... Hannibal
Chilton, John A. ..... Address Unknown
Chopin, George F. ..... St. Louis
Christman, E. E. ..... Address Unknown
Ciapciak, Stanley J. ..... St. Louis
Claiborne, Edward G. ..... Camdenton
Clancy, James F. ..... St. Louis
Clapp, Roger W. ..... Clayton
Clapsaddle, Clare J. ..... Ste. Genevieve
Claridge, Ralph A. ..... St. Louis
Clark, Clarence L. ..... St. Louis
Clark, Charles F., Hermosa Beach, Calif.
Clark, Harold B. ..... Kansas City
Clark, James Frederick ..... St. Louis
Clark, Richard G. ..... St. Louis
Clasen, Arthur C. ..... Address Unknown
Clay, Calvin ..... St. Charles
Clay, Hampson S. ..... Poplar Bluff
Claybourn, Norman L., El Dorado Springs
Cleary, Frank ..... St. Louis
Clemens, James R. ..... Webster Groves
Clemmons, Walter M., North Kansas City
Cleveland, Andrew H. ..... St. Louis
Cleveland, Horace F. ..... St. Louis
Cline, Edward W. ..... Webb City
Cline, Harold H. ..... Piedmont
Cline, Jesse A. ..... Oran
Clinton, Lloyd B. ..... Carthage
Clithero, W. H. ..... St. Louis
Coates, Chester C. ..... Joplin
Coates, Thomas A. ..... St. Louis
Coburn, Donald F. ..... Kansas City
Cochran, J. H. ..... Cape Girardeau
Cochrane, Joseph J. ..... Kansas City
Cockrell, John L. ..... Richmond
Cofer, James C. ..... Kennett
Coffelt, Kenneth C. ..... Springfield
Coffey, Ralph Ringo ..... Kansas City
Coffey, William H. ..... Kansas City
Coffin, Ernest L. ..... St. Louis
Coffin, Helen Kingsbury ..... Kansas City
Coffin, Theodore A. ..... Kansas City
Coffman, Delmar L. ..... Evansville, Ind.
Coffman, Esther E. L. ..... St. Louis
Cohen, Frank ..... St. Louis
Cohen, Harry K. ..... Kansas City
Cohen, Louis ..... St. Louis
Coil, Paul E. ..... Mexico
Colby, Buford M. ..... Hale
Coldwater, Kenneth B., Jefferson Barracks
Cole, Paul F. ..... Springfield
Coleman, William G. ..... St. Louis
Colgate, Cleon Edward ..... Amarillo, Texas
Coller, Frederick C. ..... Danville, Ill.
Collier, Alfred ..... Chillicothe
Comboy, Lawrence J. ..... Independence
Combs, T. D. ..... Lockwood
Commerford, James J. ..... Crystal City
Compton, James Roy ..... St. Louis
Cone, Alfred J. ..... Chesterfield
Conley, Dudley S. ..... Columbia
Connell, Evan S. ..... Kansas City
Connor, John J. ..... St. Louis
Conover, Charles C. ..... Kansas City
Conrad, Adolph H. ..... St. Louis
Conrad, Adolph H., Jr. ..... St. Louis
Conrad, Harry S. ..... St. Joseph
Conrad, Joseph A. ..... Chillicothe
Conrad, Marshall, B. ..... Danville, Ill.
Conrad, Raymond C. ..... Springfield
Conrad, Robert W. ..... St. Joseph
Conway, Francis ..... St. Louis
Cook, James T. ..... St. Louis
Cook, Jerome E. ..... St. Louis
Cook, O. W. ..... Caruthersville
Cook, Ralph L. ..... University City
Cook, Robert J. ..... Brentwood
Cook, Thomas F. ..... Richmond
Cooke, Jean V. ..... St. Louis
Coombs, Miller O. ..... Joplin
Coon, James W. ..... Des Moines, Ia.
Cooper, Claude W. ..... Thayer
Cooper, Henry T. ..... St. Louis
Cooper, John H. ..... Kansas City
Cooper, John M. ..... Butler
Cooper, Lawrence E. ..... Cooter
Cooper, Maurice Edmund ..... Columbia
Cooper, Raymond G. ..... Penns Grove, Pa.
Cooper, R. Lee ..... Warrensburg
Cope, James C. ..... Kansas City
Cope, Josef S. ..... Kansas City
Copher, Glover H. ..... St. Louis
Cordonnier, Justin ..... St. Louis
Cordry, Harold V. ..... Kansas City
Corley, Henry N. ..... St. Louis
Cornell, John C. ..... St. Louis
Correnti, Nicholas A. ..... St. Louis
Cortner, Mary C. ..... Kansas City
Cory, Harriet S. ..... St. Louis
Cossins, Carlos E. ..... St. Joseph
Costello, Cyril J. ..... St. Louis
Costello, Joseph P. ..... St. Louis
Costello, Joseph P., Jr. ..... St. Louis
Costen, James B. ..... St. Louis
Costrino, Joseph A. ..... St. Louis
Cotton, Tolman W. ..... Van Buren
Cottrell, Wilson P. ..... Reeds Spring
Coughlin, Bertrand D. ..... St. Louis
Counsell, Chester M. ..... Kansas City
Cowan, R. D. ..... Aurora
Cowan, Watt O. ..... Greenfield
Cowherd, Joseph Bird ..... Kansas City
Cox, Kenneth E. ..... Kansas City
Craig, Arthur D. ..... Springfield
Craig, Irwin T. ..... Joplin
Craig, Owen W. D. ..... St. Joseph
Craig, William E. ..... Moberly
Cramb, Arthur B. ..... Strafford, N. H.
Cramer, Quentin ..... Address Unknown
Crawford, Archie L. ..... Joplin
Crawford, H. S. ..... Long Beach, Calif.
Creane, John C. ..... St. Louis
Creech, Joseph C. ..... Troy
Crego, Clarence H., Jr. ..... St. Louis
Cremer, William J. ..... Fulton
Crews, Robert N. ..... Fulton
Crites, Edward ..... Sedgewichville
Crites, John L. ..... St. Louis
Cron, Heinz E. ..... St. Louis
Cross, Glen O. ..... San Francisco, Calif.
Crossen, Harry S. ..... St. Louis
Crossen, Robert J. ..... St. Louis
Crossman, Robert Wesley ..... St. Louis
Crouch, F. Richard ..... Farmington
Crouch, Richard L. ..... Chicago, Ill.
Crowe, John T. ..... New York, N. Y.
Crowson, Eugene L. ..... Pickering
Culbertson, William F. ..... Springfield
Cullers, Charles H. ..... Trenton
Cummings, James H. ..... St. Louis
Cummins, Walter F. ..... Kansas City
Cunningham, Eric A. ..... Louisiana
Cunningham, Harvey L. ..... Cape Girardeau
Curdy, Robert J. ..... Kansas City
Curran, Edward J. ..... Kansas City
Curran, Kevin E. ..... Kansas City
Curran, Maurice D. ..... Kansas City
Currie, Kenneth P. ..... Poplar Bluff
Cutler, Harold M. ..... St. Louis
Cutler, Harry ..... St. Louis

—D—

Daake, John W. ..... St. Louis
Dahms, Gustave ..... St. Louis
Daley, Frank R. ..... Hamilton
Daley, Lyle M. ..... Hamilton
Dalton, Arthur R. ..... St. Louis
Dalton, Martin ..... Fenton
Dalton, Michael H. ..... St. Louis
Daly, John R. ..... St. Louis
Daman, George A. ..... St. Louis
Damron, O. E. ..... Elsberry
Damron, Oscar H. ..... Warrensburg
Danglade, James H. ..... Kansas City
Danis, Peter G. ..... St. Louis
Dann, David S. ..... Kansas City
Darnell, Thomas F. B. ..... Kansas City
Darrow, Arthur C. ..... San Fernando, Calif.
Davault, Webster W. ..... Allenville
Davidson, Morris ..... St. Louis
Davie, Joseph ..... St. Louis
Davis, Albert W. ..... Kansas City
Davis, C. B. ..... Nevada
Davis, Charles B. ..... Walker
Davis, Edgar W. ..... Givin, Ia.
Davis, Frank L. ..... St. Louis
Davis, Frank L., Jr. ..... St. Louis
Davis, Harry H. ..... Rolla
Davis, Irl R. ..... St. Louis
Davis, John J. ..... Kansas City
Davis, Kenneth Albert ..... Kansas City
Davis, Landis Y. ..... Canton
Davis, Martin W. ..... Cape Girardeau
Davis, Myron Woodward ..... St. Louis
Davis, Paul C. ..... Neosho
Davis, Phillips N. ..... St. Louis
Davis, Robert C. ..... Kansas City
Davis, Robert I. ..... Birch Tree
Davis, Samuel S. ..... Address Unknown
Davis, Thomas M. ..... St. Louis
Davis, Wilbur L. ..... Charleston
Dawson, John W. ..... El Dorado Springs
Dawson, Lerton V. ..... Excelsior Springs
Day Anthony B. ..... St. Louis
Day, Maxwell ..... St. Joseph
Deakin, Rogers ..... St. Louis
Dean, Francis D. ..... Fayette
Dean, Lee Wallace, Jr. ..... St. Louis
Dean, Leslie E. ..... Maryville
DeLamater, Hasbrouck ..... St. Joseph
Delaney, Joseph H. ..... Address Unknown
de la Torre, John J. ..... Sullivan
del Regato, J. A. ..... Columbia
Delzell, William A. ..... Springfield
DeMaria, Peter Frank ..... Address Unknown
Demko, Frank ..... St. Louis
Demko, William ..... St. Louis
DeMotte, John Allan ..... Kansas City
Dempsey, D. T. ..... Kennett
Denk, Albert A. ..... St. Louis
Denney, Richard W. ..... Mountain Grove
Dennie, Charles C. ..... Kansas City
Denny, Chester H. ..... Creve Coeur
Denny, H. M. ..... Union
Denny, Robert B. ..... University City
Denton, Levi D. ..... Hayti
DePew, Heber B. ..... St. Louis
Deppe, Arthur H. ..... St. Louis
DeTar, Burleigh E. ..... Joplin
Deutch, Max ..... St. Louis
Devereux, James A. ..... Jefferson Barracks
DeVilbiss, E. F. ..... Kansas City
Devine, John B. ..... St. Louis
DeWeese, Everett R. ..... Kansas City
Dexheimer, Frank E. ..... Columbia
Dickman, Roy W. ..... Mount Vernon
Dickson, Frank D. ..... Kansas City
Dickson, James A. ..... St. Louis
Dieckman, William C. ..... Dexter
Diehr, Alvin H. ..... St. Louis
Diehr, Maurice A. ..... St. Louis
Diekroeger, Manuel L. ..... Boonville
Dietrich, Karl David ..... Columbia
DiLeo, Senatro W. ..... St. Louis
Dill, Foster A. ..... Maplewood
Dillon, William G. ..... Salem
Dimond, Edgar A. ..... Kansas City
Dinellie, Frank E. ..... Poplar Bluff
Disque, Andrew A. ..... St. Joseph
Diveley, Rexford L. ..... Kansas City
Dixon, John Rex ..... Brookfield
Dixon, Otto Jason ..... Kansas City
Dlabal, Luke J. ..... Independence
Dmytryk, Eugene T. ..... St. Louis
Doan, Deborah ..... Bakersfield
Dobbs, Otto R. ..... St. Louis
Donaldson, J. Earle ..... Kansas City
Donley, Robert R. ..... Monett
Donnell, George N. ..... San Francisco, Calif.
Donnell, Jesse F. ..... Crystal City
Donnell, Robert Hart ..... Crystal City
Donnell, Thomas A. ..... DeSoto
Dorris, George T. ..... Illmo
Dorris, Richard P. ..... Jefferson City
Dorsett, E. Lee ..... St. Louis
Doubek, John C. ..... St. Louis
Douglas, Thomas H., Jr. ..... Oseola
Douglass, Jesse E. ..... Webb City
Dowd, James F., Jr. ..... Address Unknown
Dowell, Donald M. ..... Chillicothe
Dowell, Horace S. ..... Chillicothe
Downey, James W. ..... Kansas City
Doyle, Charles R. ..... St. Louis
Doyle, Raymond E. ..... St. Louis
Doyle, William J. ..... St. Louis
Drace, Charles C. ..... St. Louis
Drace, Charles C., Jr. ..... St. Louis
Drace, James J. ..... Cape Girardeau
Drake, Avery A. ..... Rolla
Drake, Truman G. ..... St. Louis
Draney, Thomas L. ..... Kansas City
Drescher, Emmett R. ..... St. Louis
Drews, Leslie C. ..... St. Louis
Drey, Norman W. ..... St. Louis
Dreyer, Philip V. ..... Huntsville
Dripps, Roy C. ..... St. Louis
Drum, Clarence G. ..... St. Louis
Duckett, Claude E. ..... Lamar
Duckworth, William Henry ..... St. Clair
Duden, Charles W. ..... St. Louis

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Write Parke, Davis & Company, Detroit 32, Michigan.

Some things you should know about the common cold

No. 209 in a series of messages from Parke, Davis & Co. on the importance of prompt and proper medical care.



MOST PEOPLE in the United States and Canada have two or more colds a year, each lasting about two weeks and causing a considerable amount of stuffy discomfort.

The danger of the common cold lies mainly in the other infections that may follow after it. For a cold lessens your resistance, and is likely to pave the way for other, more serious, respiratory ailments.

Sinusitus, ear infections, bronchitis, and the various forms of pneumonia are frequently ushered in by a cold. Pneumonia, particularly, is likely to attack a person who is overtired, or run-down because of a severe cold.

True, many of these respiratory diseases are not as dangerous as they used to be. (Modern infection-fighting drugs—such as penicillin and the sulpha drugs—offer highly effective treatment for many cases.)

But, of course, it is always better to *prevent* a serious illness whenever possible.

If you have a cold, it's just good sense to stay away from people, to avoid spreading the infection; and to get plenty of rest—in bed if possible.

If your cold is accompanied by fever, a persistent cough, or a pain in the chest, face, or ear, call your doctor at once.

The sooner you seek his help, the more he can do to help you avoid a long and serious illness.

And, in the case of children, an early examination may disclose that what appears to be only a cold may instead be a starting symptom of an entirely different disease, such as measles or scarlet fever.

SEE YOUR DOCTOR. Never try the foolhardy experiment of dosing yourself. Your doctor's treatment of one illness may be quite different from his treatment of another illness which appears the same to you.

Let your doctor diagnose your ailments. Let him decide what treatment is best for your particular case. Then follow his instructions to the letter. His advice is the only advice you should take on any question that concerns your health.

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Duemler, Thomas B. ....Seneca
Duer, Mildred C. ....Kansas City
Duff, Talbot S. ....Cainsville
Duffy, Edgar A. ....Trenton
Duffy, Oliver F. ....Trenton
Dugan, Lawrence J. ....St. Louis
Dugay, Harry W. ....Kansas City
Dulick, Michael ....St. Louis
DuMont, Clement C. ....St. Joseph
Dunaway, Howard A. ....Sikeston
Duncan, Ralph E. ....Kansas City
Duncan, Robert D. ....Springfield
Duncan, William H. ....Kansas City
Dunham, R. H. ....North Kansas City
Dunkeson, Edward B. ....Lathrop
Dunmore, George O. ....Kennett
Dunn, Edward H. ....Richmond Heights
Dunsmore, J. M. ....St. Joseph
Durham, Silas L. ....Dearborn
Durst, Henry ....Fulton
Dworkin, Saul ....St. Louis
Dwyer, Hugh L. ....Kansas City
Dwyer, Reinhardt D. ..North Kansas City
Dwyer, Thomas L. ....Mexico
Dyer, Clyde P. ....St. Louis
Dyer, Dallas J. ....St. Louis
Dyer, David P. ....Sedalia
Dyer, John H. ....Warrenton
Dysart, William P. ....Columbia

—E—

Eades, Dee W. ....St. Louis
Earp, Ralph K. ....St. Louis
Eber, Carl T. ....St. Louis
Echterhoff, Harry R. ....St. Louis
Eck, Peter A. ....St. Louis
Ecker, Decider ....Pacific
Eckert, Charles L. ....St. Louis
Eckert, Clarence T. ....St. Louis
Ecklund, Archibald ....Mare Island, Calif.
Edde, Clifford G. ....Kansas City
Edele, Eugene Harry ....St. Louis
Edmonds, Devilla A. ....Kansas City
Edmondson, John L. ....Stella
Edmundson, J. Phil ....Kansas City
Edwards, D. R. ....Sedalia
Edwards, Edwin D. ....St. Louis
Edwards, Francis L. ....Pierce City
Edwards, Joseph C. ....St. Louis
Edwards, T. Burton ....Cedar Hill
Eggleston, E. E. ....Macon
Egley, Loren Edward ....St. Louis
Ehlers, Charles W. ....St. Louis
Ehresmann, Joseph J. ....Carrollton, Ill.
Eidelman, J. Robert ....St. Louis
Eidmann, Walter P. ....St. Louis
Eigel, Edwin G. ....St. Louis
Eimer, Charles E. ....St. Louis
Eisele, Matthew B. ....East St. Louis, Ill.
Eisenmann, Benjamin P. ....New Haven
Eklund, Alfred W. ....Pleasant Hill
Elam, William T. ....St. Joseph
Elders, Frank A., Jr. ....Cuba
Eldridge, Charles J. ....Kansas City
Eliscu, Fred ....St. Joseph
Eliscu, Juliette ....Joplin
Elkins, Ronald F. ....Springfield
Ellersieck, Dorothy M. ....St. Louis
Ellery, William L. ....LaGrange
Ellett, William H. ....Appleton City
Elliott, B. Landis ....Kansas City
Elliott, James R. ....Kansas City
Elliott, John R. ....St. Joseph
Eliott, Raymond Glenn ....Kansas City
Ellis Burnett E. ....Gideon
Ellis, Frank B. ....Garden City
Ellis, Sam ....St. Louis
Ellis, William Wesley ....Marceline
Ellison, Leroy E. ....Maplewood
Elman, Robert ....St. Louis
Elmer, Warren P. ....St. Louis
Elrod, Dennis B. ....Cape Girardeau
Elson, Julius ....University City
Elston, George B. ....Kansas City
Elz, Julius T. ....St. Louis
Emery, Edgar V. N. ....St. Louis
Emmert, Fred ....St. Louis
Engel, Lawrence P. ....Kansas City
Engleman, Reinhold ....Denver, Colo.
English, Milton T., Jr. ....Kirksville
English, Wallace D. ....Cardwell
Engman, Martin F. ....St. Louis
Engman, Martin F., Jr. ....St. Louis
Enloe, Lawrence D. ....Jefferson City
Epp, George J. ....St. Louis
Epperly, R. G. ....Huntsville
Epps, Curtis ....Springfield
Erni, Harry E. ....Kansas City
Ernst, Edwin C. ....St. Louis
Ernst, Edwin C., Jr. ....Rochester, Minn.
Ernst, Roland P. ....Augusta, Ga.
Eskeles, Irwin H. ....St. Louis
Eslick, Ralph L. ....Raytown
Esmond, Marie ....Kansas City
Esslinger, Arthur T. ....St. Louis
Esslinger, Gillis A. ....Berkeley, Calif.
Estes, Albert M. ....Jackson
Eto, Jackson ....St. Louis
Etzenhouser, Russell D., Jr., Independence
Eubank, A. E. ....Kansas City
Eubank, Dillard M. ....Raytown
Eubank, William R. ....Kansas City
Eudy, William Thomas ....Eminence
Evans, Albert L. ....Bonne Terre
Evans, E. J. E. ....Kansas City
Evans, Emery E. ....St. Louis
Evans, Ezra L. ....Springfield
Evans, Ezra L., Jr. ....Springfield
Evans, Harry T. ....Branson
Evans, Robert L. ....Boonville
Everist, Guy V. ....Rolla
Eversoll, Norton J. ....St. Louis
Ewerhardt, F. H. ....St. Louis
Ewing, Bertha E. ....Lawrence, Kan.
Eyermann, Charles H. ....St. Louis
Eyermann, H. Walter ....Warrenton

—F—

Fagley, Raymond C. ..West Orange, N. J.
Fair, Shields W. ....Kansas City
Falk, O. P. J. ....Clayton
Fallet, Charles E. ....DeSoto
Farley, Claude C. ..Overland Park, Kan.
Farley, William M. ....St. Louis
Farney, Jacob P. ....Kansas City
Farnsworth, Jesse J. ....Kansas City
Farrar, John F. ....Greenville, S. C.
Farrell, Robert J. ....St. Louis
Farris, H. G. ....St. Louis
Farris, William Walker ....St. Louis
Farthing, Fred R. ....Springfield
Farthing, Gene W. ....Springfield
Farthing, Robert R. ....Ozark
Fassett Charles Wood, Burlingame, Calif.
Feierabend, Frank L. ....Kansas City
Feind, Earl E. ....Rolla
Feinstein, Leon A. ....St. Louis
Feist, George V. ....Kansas City
Feller, C. E. ....Springfield
Feller, Harold H. ....St. Louis
Fellhauer, Carl M. ....St. Louis
Fellows, William W. ....Aspinwall, Pa.
Feltz, L. W. ....Perryville
Ferguson, Eugene H. ....Kansas City
Ferguson, James T. ....Kansas City
Ferguson, James T., Jr. ....Topeka, Kan.
Ferguson, John P., Jr. ....Springfield
Ferguson, L. H. ....Monett
Ferguson, L. H., Jr. ....St. Louis
Ferguson, Luther J. ....St. Joseph
Ferguson, R. E. ....Elmo
Ferguson, Robert M. ....Webb City
Ferrara, John Pierre ....St. Louis
Ferrell, Thomas Enoch, Jr. ....Springfield
Ferris, Carl R. ....Kansas City
Ferris, David P. ....St. Louis
Ferris, Joseph L. ....St. Louis
Fessenden, E. M. ....St. Louis
Findley, James W. ....Kansas City
Fineberg, Maxwell ....St. Louis
Fingert, H. H. ....St. Louis
Finley, Freeman L. ....Overland
Finney, William O. ....Chaffee
Finnegan, Frank R. ....St. Louis
Fischel, Walter ....St. Louis
Fischer, Erich ....St. Louis
Fischer, Theodore ....Altenburg
Fish, Virgil O. ....St. Louis
Fisher, Arthur O. ....St. Louis
Fisher, Joseph L. ....St. Joseph
Fitch, C. H. Max ....Springfield
FitzGerald, Leo P. ....University City
Flader, Otto F. ....St. Louis
Flanary, David L. ....Phoenix, Ariz.
Flance, Israel J. ....St. Louis
Flanders, Horace Frank ....Kansas City
Flavan, David B. ....St. Louis
Fleishman, Alfred ....St. Louis
Fleming, Jacob W., Jr. ....Moberly
Fleming, Thomas S. ....Moberly
Fletcher, Paul F. ....St. Louis
Florian, Albert J. ....Kansas City
Flotte, Bernard H. ....St. Louis
Flynn, George T., Jr. ....St. Louis
Flynn, George W. ....Clayton
Flynn, John T. ....St. Louis
Flynn, Joseph E. ....St. Louis
Focht, Ralph H. ....Strafford
Fogle, Robert L. ....Otterville
Folkers, L. M. ....Columbia
Fonda, James W. ....Poplar Bluff
Ford, Lee T., Jr. ....St. Louis
Ford, William T. ....Portsmouth, Va.
Ford, Walter W. ....Gordonville
Fordyce, Claude P. ....St. Joseph
Forgrave, John R. ....St. Joseph
Forgrave, Leon Paul ....St. Joseph
Forman, Frank S., Jr. ....Kansas City
Forman, George W. ....St. Joseph
Forsen, James A. ....St. Louis
Forsman, Waldo W., Jr. ....St. Louis
Forster, Armand C. ....St. Louis
Forti, John J. ....St. Louis
Foster, Howard M. ....St. Louis
Foster, Jack L. ....Desloge
Foster, Leon ....St. Louis
Foster, Robert L. ....St. Louis
Fowler, I. Charles ....North Kansas City
Fox, Leon J. ....St. Louis
Fox, Robert E. ....Webster Groves
Frame, Homer Glenn ....Mountain Grove
Francka, W. F. ....Hannibal
Frank, Adolph M. ....St. Louis
Frankel, Sol Irwin ....St. Louis
Frankenthal, Maurice A. ....St. Louis
Frankl, George ....Kansas City
Franklin, Max S. ....St. Louis
Fredeen, Robert C. ....Kansas City
Fredendall, George W. ....Lexington
Fredericks, Edward L., Address Unknown
Freedman, Harold ....St. Louis
Freedman, Ruth S. ....St. Louis
Freeman, S. F. ....Springfield
Freeman, Spencer L. ....Kirksville
Freimuth, L. E. ....St. Louis
Freund, Newton M. ....St. Louis
Freund, Samuel J. ....St. Louis
Frick, John Paul ....Kansas City
Friedman, Bernard ....Koch
Friedman, Morris L. ....Kansas City
Fries, Armand D. ....St. Louis
Fries, William A. ....St. Louis
Froelich, Edwin J. ....St. Louis
Fuchs, George J. ....St. Louis
Fuerth, A. L. ....Cape Girardeau
Fujikawa, Y. F. ....Mount Vernon
Fulbright, James H. ....Springfield
Fulkerson, Perry P. ....St. Joseph
Funsch, Edwin C. ....St. Louis
Funsch, Robert E. ....St. Louis
Furlow, Leonard T. ....St. Louis
Fuson, John A. ....Mansfield
Fuson, Levi H. ....St. Joseph
Fuson, William A. ....Trenton

—G—

Gaebe, Harold C. ....Desloge
Gafney, George T. ....St. Louis
Gage, Helen L. B. ....Webster Groves
Gaines, Quentin M. ....Kirkwood
Gainey, Harold L. ....Kansas City
Galbreath, Jesse W. ....Urich
Gale, Frank W. ....Bismarck
Gale, Joseph F. ....Chillicothe
Gale, Richard ....Welch, W. Va.
Gale, William S. ....Osborn
Gallagher, John F. ....St. Louis
Gallagher, Joseph C. ....St. Louis
Gallagher, William J. ....St. Louis
Ganley, William C. ....Kansas City
Gans, Frederick A. ....Abilene, Kan.
Gansloser, Maximilian W. ....St. Louis
Gansloser, Wilbert M. ....St. Louis
Garcia, Charles L. ....Mexico
Gard, Raymond F. ....Independence
Gardner, Joseph W. ....Glasgow
Garner, Lynn M. ....Jefferson City
Garvin, Leo V. ....St. Louis
Gashwiler, J. Schooling ....Novinger
Gaskins, John Hayden ....Kansas City
Gaston, Ralph E. ....Webster Groves
Gauen, George O. ....St. Louis
Gaunt, Frank P. ....Webster Groves
Gay, Elmer E. ....Richmond
Gay, George ....Ironton
Gay, Lee Pettit ....St. Louis
Gay, Ray J. ....Kansas City
Gearhart, M. ....Bethany
Gebert, Clara M. ....Valley Park
Gebhart, Oliver C. ....Oregon
Gempel, Paul A. ....Kansas City
Gentry, Enoch Nelson, Jr. ....Kansas City
Gentry, Marvin C. ....Ava
Gentry, Merritt L. ....Springfield
George, Charles A. ....Springfield
Geraughty, Edward ....Kansas City
Gerst, Aloysius C. ....St. Louis
Gerwig, Henry E. ....Downing
Gerwitz, Bernard W. ....St. Louis
Gestring, Hugh A. ....Kansas City
Getelson, Joseph ....Kansas City

Gettinger, Andrew J. ..... St. Louis
Gettys, Henry ..... St. Louis
Gibson, Edward T. ..... Kansas City
Gibson, Helen F. ..... St. Louis
Gibson, Ora James ..... Cape Girardeau
Gibson, Walter E., Sr. ..... DeSoto
Gifford, Allen W. ..... Springfield
Gilbert, Robert L. ..... St. Louis
Gildea, Edwin F. ..... St. Louis
Gildea, Margaret C. L. ..... St. Louis
Gilkey, Harry M. ..... Kansas City
Gilles, Clifford L. ..... Kansas City
Gillham, Frank W. ..... Jefferson City
Gilliland, Charles E. ..... St. Louis
Gilliland, Oliver S. ..... Kansas City
Gillmor, Charles Stewart ..... Kansas City
Ginsberg, A. Morris ..... Kansas City
Ginsberg, Edward L. ..... Kansas City
Ginsberg, Norman A. ..... Kansas City
Gish, Rutledge ..... Fulton
Gissy, Charles J. ..... St. Louis
Gist, William L. ..... Kansas City
Gist, William W. ..... Kansas City
Gitt, Joseph J. ..... St. Louis
Glasco, Loren A. ..... Urbana
Glaser, Martin J. ..... St. Louis
Glasgow, Marvin C. ..... Cardwell
Glassberg, Bertrand Y. ..... St. Louis
Glasscock, Ernest L. ..... Kansas City
Glaze, Kenneth F. ..... St. Louis
Glenn, Elmer E. ..... Springfield
Glenn, Joseph E. ..... St. Louis
Glennon, William P. ..... St. Louis
Glick, Harry N. ..... St. Louis
Glover, Kenneth ..... Mt. Vernon
Glynn, Robert ..... Springfield
Godfrey, George B. ..... St. Louis
Godfroy B. M. ..... Roscommon, Mich.
Goebel, Joan M. ..... St. Louis
Goerger, Verne F. ..... St. Louis
Goerner, Paul G. ..... Augusta, Ga.
Goetowski, Paul ..... St. Joseph
Goetsch, Anne T. ..... Berkeley, Calif.
Goetze, William F. ..... St. Joseph
Goforth, Clifford ..... Doniphan
Goldberg, I. E. ..... Braymer
Goldenson, Max J. ..... St. Louis
Goldman, Alfred ..... St. Louis
Goldman, Hyman J. ..... St. Louis
Goldman, Lawrence ..... St. Louis
Goldman, Max ..... Kansas City
Goldman, Melvin L. ..... St. Louis
Goldwasser, Herbert V. ..... St. Louis
Gonser, Karl B. ..... Sedalia
Goodman, J. N. ..... Glendale
Goodman, LeRoy ..... Kansas City
Goodman, Nathaniel .. Richmond Heights
Goodrich, Charles F. ..... Washington
Goodrich, Harold A. ..... Webster Groves
Goodrich, Howard B. ..... Hannibal
Goodson, William H. ..... Liberty
Goodson, William H., Jr. ..... Kansas City
Gorelick, David F. ..... Columbia
Gorla, Wayne O. ..... St. Louis
Gottlieb, Leo ..... St. Louis
Gottschalk, Helen C. ..... Fort Worth, Tex.
Gowen, Leo F. ..... Glendale
Grabske, Charles F. ..... Independence
Grace, Charles M. ..... Chillicothe
Grace, Clarence M. ..... Chillicothe
Grace, John F. ..... Excelsior Springs
Gradwohl, R. B. H. ..... St. Louis
Graeser, Richard G. ..... Kirkwood
Graham, Evarts A. ..... St. Louis
Graham, James W. ..... Kansas City
Graham, John G., Jr. ..... Detroit, Mich.
Graham, Wallace H. ... Washington, D. C.
Grandstaff, Eleanor H. ..... Kansas City
Graneto, Joseph A. ..... St. Louis
Grant, Claude S. ..... St. Joseph
Grant, Samuel B. ..... St. Louis
Grantham, Samuel A., Jr. ..... Joplin
Grauerholz, James W. ..... Kansas City
Graul, Elmer G. ..... St. Louis
Graul, Walter P. ..... Philadelphia, Pa.
Graves, Arthur J. ..... Mt. Vernon
Graves, William W. ..... St. Louis
Gray, Samuel H. ..... St. Louis
Gray, Walter C. ..... St. Louis
Greaves, Eli A. ..... Kansas City
Green, John ..... St. Louis
Green, John R. ..... Independence
Green, Manuel E. ..... St. Louis
Green, Stanley L. ..... Independence
Greenberg, Charles ..... St. Joseph
Greene, Harry L. ..... Hannibal
Greene, Joseph Wayne ..... Independence
Greene, Luther D. ..... Richmond
Greene, Maurice L. ..... St. Louis
Greene, W. Wallace ..... Kansas City
Greenhouse, J. M. ..... St. Louis
Gregg, Arthur M. ..... Joplin
Gregg, Mitchell ..... Joplin
Gregory, Kendall D. ..... St. Louis
Greiner, Theodore ..... St. Louis
Griffin, Fred ..... Mexico
Griffin, M. Evelyn ..... Buffalo
Griffin, Olin A., Jr. ..... Buffalo
Griffith, Edgar M. ..... Harrisonville
Griffith, George W. ..... Kansas City
Griffith, Harry Milton ..... Columbia
Griffiths, Harry C. ..... Moberly
Grim, George E. ..... Kirksville
Grimes, M. E. ..... St. Joseph
Grindon, Joseph, Jr. ..... St. Louis
Grindon, Joseph, Sr. ..... St. Louis
Griot, Albert J. ..... St. Louis
Griot, George A. ..... Springfield
Grogan, Frank M. ..... St. Louis
Gronau, Axel R. ..... St. Louis
Gronoway, Terrence P. ..... Macon
Gross, Joseph L. ..... St. Louis
Grosskreutz, Joseph A. ..... St. Louis
Grossman, Marvin ..... Fredericktown
Grove, G. W. ..... Knobnoster
Growdon, John A. ..... Kansas City
Grueb, Paul M. ..... St. Louis
Gruenfeld, Gerhard E. ..... St. Louis
Grundmann, William H. ..... St. Louis
Guccione, Joseph B. ..... St. Louis
Guffey, Don Carlos ..... Kansas City
Guggenheim, Lewis C. ..... Kansas City
Guhman, Charles N. ..... St. Louis
Guldner, Edmond ..... Address Unknown
Gulick, Charles R. ..... St. Louis
Gum, William R. ..... St. Louis
Gummels, Belmont B. ..... St. Louis
Gundelach, C. Armin ..... St. Louis
Gundlach, Arthur ..... St. Louis
Gunn, Aubrey J. ..... Versailles
Gunn, Walter T. ..... St. Louis
Guthrie, John A. ..... Neosho
Guyot, J. DeVoine ..... Jefferson City
Gzell, Ronald ..... St. Louis

—H—

Hackmeyer, Rubin ..... St. Louis
Haffner, Heinz ..... St. Louis
Hagebusch, Omer E. ..... St. Louis
Hageman, Paul O. ..... St. Louis
Haggen, Margaret E. ..... Kansas City
Haight, John M. ..... Kansas City
Haile, Leon C. ..... St. Louis
Hale, Tyre H. ..... St. Louis
Haley, Roy R. ..... Brookfield
Hall, Andy, Jr. ..... St. Louis
Hall, D. Walton ..... Kansas City
Hall, Durward G. ..... Springfield
Hall, Frank W. ..... Cape Girardeau
Hall, James R. ..... Kansas City
Hall, Lee ..... Maplewood
Hall, Marvin F. ..... Joplin
Hall, Preston C. ..... St. Louis
Hall, Robert A. ..... St. Louis
Hall, Robert G. ..... Nevada
Hall, Thomas Bryan ..... Kansas City
Hall, Willis ..... St. Louis
Hallberg, John W. ..... Kansas City
Halperin, Phillip H. .... Address Unknown
Hamilton, Buford G. ..... Kansas City
Hamilton, Caldwell K. ..... St. Louis
Hamilton, Eugene G. ..... St. Louis
Hamilton, Eugene H. ..... Joplin
Hamilton, Eugene P. ..... Kansas City
Hamilton, Hugh G. ..... Kansas City
Hamilton, William P. ..... St. Louis
Hamlett, William Henry ..... Paris, Tex.
Hammler, Christiana V. ..... St. James
Hammond, John J. ..... St. Louis
Hampton, Joseph R. ..... Clinton
Hampton, Oscar P., Jr. ..... St. Louis
Hampton. Stanley F. ..... St. Louis
Hamtil, Edward William ..... St. Louis
Hanan, Ernest B. ..... Springfield
Handley, Walter E. ..... Springfield
Hanford, Wesley W. ..... St. Louis
Hanks, Ralf ..... Kirksville
Hanlon, Thomas J. ..... St. Louis
Hans, Willard J. ..... St. Louis
Hansel, French K. ..... St. Louis
Hansen, Arthur L. ..... Appleton City
Hansen, Walter Joseph ..... St. Joseph
Hanser, S. Albert ..... St. Louis
Hanser, Theodore H. ..... St. Louis
Hanss, Armand W. ..... Springfield
Hardacre, Ruth Anna ..... Kansas City
Hardegree, Harvey ..... Bronx, N. Y.
Hardesty, Joel W. ..... Hannibal
Hardesty, John F. ..... St. Louis
Hardin, Thomas L. ..... St. Charles
Harding, Carl W. ..... Grandview
Hardy, Guerdan ..... St. Louis
Hardy, John W. ..... Sumner
Hardy, Joseph A., Jr. ..... St. Louis
Hardy, William F. ..... St. Louis
Harell, Alex ..... Jefferson Barracks
Hargrove, Fred T. ..... Springfield
Harkins, William B. ..... St. Louis
Harkness, Harry ..... Warrensburg
Harlan, Delly Lee ..... Clarence
Harland, R. E. ..... Ironton
Harless, Morris S. ..... Kansas City
Harmann, Martin F. ..... St. Louis
Harms, Florian L. ..... Salisbury
Harpole, Bernard P. ... Address Unknown
Harrell, Henry J. ..... Morrisville
Harrell, Roosevelt E. ..... Lebanon
Harrington, G. Leonard ..... Kansas City
Harris, Charles W. ..... St. Louis
Harris, Downey L. ..... St. Louis
Harris, Harold S. ..... Troy
Harris, Hinman A. ..... Bloomfield
Harris, Irwin J. ..... St. Louis
Harris, Russell D., Oklahoma City, Okla.
Harris, Solon P. ..... St. Louis
Harris, Thomas S. ..... Springfield
Harrison, Addison M. ..... Kansas City
Harrison, John Frank ..... Mexico
Harrison, Lee B. ..... St. Louis
Harrison, Stanley L. ..... St. Louis
Harsh, Ralph T. ..... Houston
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Hartmann, Alexis F. ..... St. Louis
Hartnett, Dalton C. ..... St. Louis
Hartnett, Leo J. ..... St. Louis
Hartwell, Basal O. ..... Drexel
Hartwig, John Adam ..... St. Louis
Harwell, James Lee ..... Poplar Bluff
Harwell, J. Lester ..... Poplar Bluff
Harwood, Samuel R. ..... St. Louis
Hashinger, Edward H. ..... Kansas City
Haskell, Claude D. ..... Tarkio
Hasl, Robert F. ..... San Francisco, Calif.
Hassett, Henry A. ..... St. Louis
Haw, Marvin T., Jr. ..... Bonne Terre
Hawker, William D. ..... St. Louis
Hawkins, George W. ..... Salisbury
Hawkinson, W. O. ..... Roanoke
Hayden, Loyola F. ..... St. Louis
Hayden, Ralph O. ..... St. Charles
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Haynes, Pugh, Jr. ..... St. Louis
Haynes, Robert Clark ..... Marshall
Haynes, Solon Earl ..... Kansas City
Hayward, John Dawson ..... St. Louis
H'Doubler, Francis T. ..... Springfield
Head, John Francis ..... St. Louis
Hearst, Allen L. ..... Kansas City
Heaton, Asa H. ..... Sedalia
Heid, Lloyd L. ..... St. Louis
Heideman, Alvah G. ..... St. Louis
Heideman, Milo L. ..... St. Louis
Heidenreich, Harry L. ..... St. Louis
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Heinrichs, J. C. ..... St. Louis
Helbing, Edward J. ..... St. Louis
Helbing, Harry H. ..... St. Louis
Heller, B. Marcus ..... Kansas City
Heller, Edward P. ..... Kansas City
Hellrung, Frank J. ..... St. Louis
Hellweg, Charles E. .... Address Unknown
Helm, James O. ..... New Florence
Helman, Richard G. ..... Kansas City
Helwig, Ferdinand C. ..... Kansas City
Hemphill, Paul H. ..... Kansas City
Henderlite, John W. ..... St. Louis
Hendin, Aaron ..... St. Louis
Hendren, Glenn W. ..... Liberty
Hengen, Henry E. ..... Pattonville
Henke, Charles F. ..... St. Louis
Hennelly, John Joseph ..... St. Louis
Hennerich, Walter E. ..... St. Louis
Henrickson, Hardin M. ..... Poplar Bluff
Henrickson, H. O. ..... Poplar Bluff
Henry, Clifford E. ..... Kirksville
Henry, Frank C. ..... Jefferson Barracks
Henske, Andrew C. ..... St. Louis
Henson, Lafayette L. ..... Bunker
Herbert, Charles T. ..... Cape Girardeau
Herbst, Frank ..... Kansas City
Herdener, Russell L. ..... St. Louis
Herington, Warner ..... Green City
Herman, Alfred ..... St. Louis
Herman, Allen I. ..... St. Joseph
Herman, Morris ..... St. Louis
Herrick, Harold C. ..... St. Louis
Herrman, George V. ..... Kansas City
Herrmann, Gustav J. ..... St. Louis
Herron, W. Floyd ..... Aurora
Hertel, Albert L. ..... St. Louis

Herzog, Gustav G. A. ....Cuba
Hess, H. Lewis....Kansas City
Hess, Paul D. ....Kansas City
Hetherington, Ellery M. ....Kansas City
Hewitt, A. Lee....St. Louis
Hewitt, Walter R. ....St. Louis
Hibbard, Blaine Zook..Address Unknown
Hickerson, John C. ....Independence
Hickerson, William H. ....Independence
Hickey, Robert F. ....St. Louis
Hicks, Edward A. ....Troy
Hieb, Wilbert E. ....New York, N. Y.
Higgins, Clinton K. ....Memphis, Tenn.
Higgins, Robert F. ....St. Louis
Highsmith, L. S. ....Philadelphia, Pa.
Hildreth, H. Rommel....St. Louis
Hill, Jack H. ....Kansas City
Hill, Jesse N. ....Independence
Hill, Roland....St. Petersburg, Fla.
Hillenbrand, H. M. ....St. Louis
Hilliard, John D. ....Ft. Monmouth, N. J.
Hines, Arthur A. ....St. Louis
Hines, Paul ....Webster Groves
Hink, Frederick W. ....Kansas City
Hirsch, Albert ....Middletown
Hirschi, William T. ....University City
Hite, Henry A. ....Green Ridge
Hobart, Carl ....St. Louis
Hobbs, Alonzo G. ....St. Louis
Hobbs, Clarence L. ....St. Louis
Hobbs, Earl B. ....Smithville
Hobbs, John E. ....St. Louis
Hoctor, Emmett F. ....Farmington
Hodge, Robert H. ....Address Unknown
Hodgson, Frank H. ....Kansas City
Hoefer, Walter H. V. ....St. Louis
Hoelscher, Harold F. ....Warrenton
Hoeper, Samuel D. ....Kansas City
Hoffman, Jacob S. ....Kansas City
Hoffmann, A. David....St. Louis
Hoffmann, R. Lee....Kansas City
Hofmann, Ottokar....Kansas City
Hofsommer, Armin C. ...Webster Groves
Hogan, Daniel F. ....Kansas City
Hogan, Frank E. ....Mound City
Hogan, Robert E. ....West Plains
Hogeboom, George W. ....Springfield
Hogg, Garrett S., Jr. ....Cabool
Hogue, Frank S. ....Kansas City
Hoke, Wilbur J. ....St. Louis
Holbrook, Walter F. ....Kansas City
Holden, Raymond F. ....St. Louis
Holdenried, William E. ....St. Louis
Holliday, Morgan Lee....Fillmore
Hollingsworth, Ray S. ....Clinton
Hollis, Luther T. ....Kansas City
Hollister, Wilbur L. ....Uvalde, Tex.
Hollo, Vencel W. ....Florissant
Hollweg, Kenneth C. ....Kansas City
Holman, Jurney H. ....Unionville
Holmes, Lemuel Isaac ....Miller
Holmes, Mansell B. ....Tuscaloosa, Ala.
Holmes, Prince Albert....Mount Vernon
Holscher, Edward C. ....St. Louis
Holt, Robert E. ....Niles, Mich.
Holtgrewe, Frederick W. ....St. Louis
Holtzen, Ernest E. ....Smithton
Homan, J. S. ....St. Louis
Honich, Nicholas J. ....St. Louis
Hook, Waller G. ....Kansas City
Hooss, Albert ....St. Louis
Hoover, H. Lee, Jr. ....Springfield
Hope, James L. ....Lebanon
Hopkins, F. G. ....Gideon
Hopkins, Thomas A. ....St. Louis
Hopson, George ....DeSoto
Horigan, Joseph A. ....Kansas City
Hornback, Edward R. ....Joplin
Hornback, George A. ....Hannibal
Horner, John L. ....St. Louis
Horst, Otto C. ....Springfield
Horton, James D. ....Springfield
Horwitz, Irwin B. ....St. Louis
Hosstatter, Leopold....St. Louis
Hosto, Leland E. ....St. Louis
Hotz, John W. ....St. Louis
Houck, Russell M. ....Excelsior Springs
Howard, Harvey J. ....St. Louis
Howard, John C., Jr. ....Kansas City
Howard, Joseph W. ....Kansas City
Howard, Walter M. ....Joplin
Howden, Thomas L. ....St. Joseph
Howe, Louis Francis ....Brentwood
Howell, James Albert....Muskogee, Okla.
Hoxie, Derrick A. ....Portsmouth, Va.
Hoxie, George H. ....Berkeley, Calif.
Hrdlicka, Victor E. ....St. Louis
Huber, Erwin T. ....St. Louis
Huber, Lasley Earl....Moberly
Huber, Melvin J. ....St. Louis
Huck, Frank F. ....Fenton
Huelsmann, Donald ....Boonville
Hughes, Clarence O. ....Ferguson
Hughes, Edgar O. ....Dixon
Hughes, Judson Martin....St. Joseph
Hughes, Shelby B. ....Clinton
Hull, Walter S. ....St. Joseph
Humberd, Charles D. ....Barnard
Hume, Harold C. ....Tipton
Hummel, Anton J. ....St. Louis
Humphrey, Henry M. ....Brashear
Hungate, Carroll P. ....Kansas City
Hunt, Claude J. ....Kansas City
Hunt, John W., Jr. ....Leadwood
Hunt, Lloyd H. ....Salem
Hunt, W. J. ....St. Joseph
Hunter, Martin P. ....Kansas City
Hurford, Phelps G. ....St. Louis
Hurst, Ben B. ....Marceline
Hurst, W. W. ....Joplin
Hurwitt, Frank ....Kansas City
Husted, George W. ....Parma
Hutto, A. Herman ....St. Louis
Hutton, Joseph Lewis....St. Louis
Hux, William J. ....Essex
Hyatt, William T. ....St. Louis
Hyde, Frank ....Eminence
Hyland, Robert F. ....St. Louis
Hyndman, Charles E. ....St. Louis

—I—

Imes, Elvin D. ....Maryville
Inglis, Ewine P., Jr., San Francisco, Calif.
Irick, Carl C. ....Webster Groves
Irland, Robert D. ....Kansas City
Irwig, Fred ....Kansas City
Irwin, William F. ....Leasburg
Isbell, Charles H. ....Carthage
Ittner, George W., Jr. ....St. Louis
Ives, George ....St. Louis
Ivy, Henry B. ....Sunflower, Kansas

—J—

Jackson, Carl A. ....Kansas City
Jackson, James O. ....Address Unknown
Jackson, William R. ....Kansas City
Jackson, William R. ....Maryville
Jacob, Rudolph D. ....Forest Park, Ill.
Jacob, Walter ....Kansas City
Jacobs, Frederich A. ....St. Louis
Jacobs, Gustave E. ....St. Louis
Jacobson, Henry ....St. Louis
Jaime, Nicholas ....Kansas City
James, Edward D. ....Joplin
James, Joseph D. ....Springfield
James, Luther S. ....Blackburn
James, Robert M. ....Joplin
James, William M. ....St. Louis
Jansen, Richard W. ....Manchester
Jansen, Robert ....Kansas City
Jarvis, James A. ....Kansas City
Jaudon, Benjamin Y. ....Webster Groves
Jaudon, Joseph C. ....Webster Groves
Javaux, Everett J. ....St. Louis
Jean, J. Ted ....St. Louis
Jeans, V. ....Joplin
Jeffries, Robert C. ....Kansas City
Jenkins, Joseph M. ....St. Charles
Jenkins, Paul A. ....Lebanon
Jennett, Harry N. ....Kansas City
Jennett, James Harvey....Kansas City
Jennings, P. W. ....Canton
Jennings, Robert J. ....Windsor
Jensen, J. Ernest....St. Louis
Jensen, Julius ....St. Louis
Jesgar, William ....St. Louis
Johansen, Frederick A. ....Carville, La.
Johnson, Charles H. ....St. Louis
Johnson, Charles S. ....Warrensburg
Johnson, Delbert P. ...Address Unknown
Johnson, Edgar W. ....Kansas City
Johnson, Edgar W., Jr. ....Kansas City
Johnson, Edward E. ....Joplin
Johnson, Glenn D. ....Maysville
Johnson, Grover C. ....Marthasville
Johnson, Mitchell D. ....Ferguson
Johnson, Paul A. ....Kansas City
Johnson, Q. Ray, Jr. ....Louisiana
Johnson, Roy ....Ferguson
Johnson, Thomas Maxwell....Kansas City
Johnson, William F. ....Lincoln, Nebr.
Johnston, A. D. ....Fort Scott, Kan.
Johnston, Joseph LeRoy....Springfield
Johnstone, Paul Nugent....Kansas City
Jolley, J. Frank....Mexico
Jolly, Benjamin N. ....St. Charles
Jolly, William H. ....New York, N. Y.
Jones, Andrew B. ....St. Louis
Jones, Augustin ....Clayton
Jones, Dorothy J. ....Kansas City
Jones, Edward E. ....Lilbourn
Jones, Garnett ....St. Clair
Jones, George H. ....Kansas City
Jones, Harold W. ....Ponca, Nebr.
Jones, Harry Lander....Kansas City
Jones, James B. ....Brentwood
Jones, John Grey....St. Louis
Jones, Kneeland P. ....Kansas City
Jones, Maurice L. ....Kansas City
Jones, Otey Sherman....St. Louis
Jones, Theodore R. ....Address Unknown
Jones, Vincent L. ....St. Louis
Jones, William E. ....St. Louis
Jones, William J. ....St. Louis
Jordan, Edward J. ....St. Louis
Jordan, Walter R. ....St. Louis
Jordan, James E. ....St. Louis
Jorstad, Louis H. ....St. Louis
Joseph, Donald J. ....San Antonio, Tex.
Joseph, George E. ....Salem
Joslyn, Harold L. ...San Francisco, Calif.
Jost, Charles A. ....Address Unknown
Jost, William E. ....St. Louis
Jostes, Frederick A. ....St. Louis
Juarez-Reyna, Guillermo....Kansas City
Juden, Alexander G. ....Cape Girardeau
Judy, Joseph D. ....Ferguson
Jungk, Carl G. W. ....St. Louis

—K—

Kalish, John T. ....Koch
Kallenbach, G. P. ....Mexico
Kaminsky, David....Jefferson Barracks
Kampschmidt, August W. ....Columbia
Kane, Clyde E. ....St. Louis
Kane, R. Emmet....St. Louis
Kanagowa, H. ....Jefferson City
Kantor, Julius M. ....Kansas City
Kaplan, Albert ....St. Louis
Kaplan, Rubin H. ....Excelsior Springs
Karl, Michael M. ....St. Louis
Karn, Robert B. ....St. Louis
Kaskie, Clifford R. ....Danville, Ill.
Katz, Samuel D. ....St. Louis
Kealhofer, George C. ....Kansas City
Kearby, Howard D. ....St. Joseph
Kearney, Elmer F. ....Oregon
Keeble, Charles B. ....St. Louis
Keeling, Forrest V. ....Elsberry
Keeling, Irene C. ....Kansas City
Keffler, Karl L. ....St. Louis
Kehoe, J. Joseph....St. Louis
Keim, John Harry....Cape Girardeau
Keim, John P. ....St. Louis
Keith, Willis E. ....Kansas City
Keller, Joseph M. ....St. Louis
Keller, Louis ....Sunmount, N. Y.
Keller, Robert M. ....St. Louis
Kelley, Gilbert B. ....Savannah
Kelley, Isaac D., Jr. ....St. Louis
Kelley, Ralph R. ....Savannah
Kelley, Robert W. ....St. Louis
Kelley, Walter L. ....Afton
Kelling, Douglas George....Waverly
Kelling, George A. ....Waverly
Kelling, Jordan ....Waverly
Kelly, Charles A. ....Lake Worth, Fla.
Kelly, Eugene H. ....Kansas City
Kelly, Marshall W. ....Jefferson City
Kelly, R. Emmet....St. Louis
Kelly, Robert Q. ....Marshall
Kelly, Thomas J. ....St. Louis
Kelly, William ....Springfield
Kenamore, Bruce ....St. Louis
Kendall, Edward A., Jr., Granite City, Ill.
Kendis, Joseph B. ....St. Louis
Kennedy, Francis L. ....St. Louis
Kennedy, John Oscar ....Kansas City
Kennedy, Robert W. ....Marshall
Kennedy, Thomas R. ....St. Louis
Kenney, Verna E. ....Joplin
Kent, Bela Kaszas....Kansas City
Kent, Clifford F. ....Kansas City
Kerr, David N. ....Kirkwood
Kerr, Frank Taylor ....Monett
Kerr, Homer L. ....Crane
Kerr, Russell ....Kansas City
Kessler, Joseph John....St. Louis
Ketcham, William M. ....Kansas City
Ketron, Marvin B. ....Kansas City
Kettelkamp, George D. ....St. Louis
Key, J. Albert....St. Louis
Keyes, E. Lawrence....St. Louis
Kibbe, Edgar A. ....California
Kibbe, John H. ....Monroe City
Kiefer, R. W. ....St. Joseph
Kieffer, Roland S. ....St. Louis
Kieffer, Victor B. ....St. Louis
Kienberger, Paul A. ....Kansas City
Kiene, Richard H. ....Kansas City
Kienzle, Edward C. ....St. Louis
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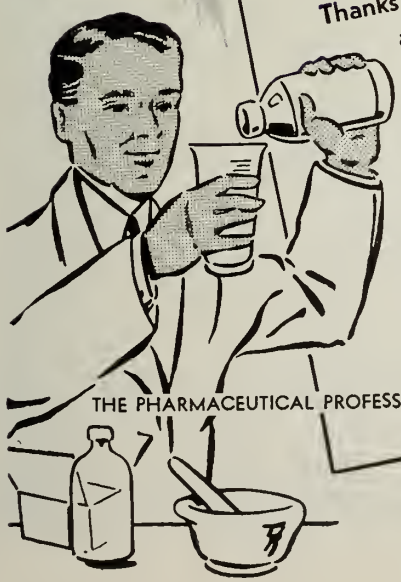
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King, George W. .....Clayton
King, John V. .....Webster Groves
King, Samuel J. .....St. Louis
Kingsland, Robert C. .....Clayton
Kinner, Helmuth M. .....St. Louis
Kinsella, R. A. .....St. Louis
Kirchner, Walter C. G. .....St. Louis
Kirk, Charlie W. .....Hopkins
Kirkpatrick, Harry E. .....Itasca, Ill.
Kirstein, Melvin B. .....St. Louis
Kirtz, Louis P. .....St. Louis
Kister, George E. .....St. Charles
Kitchell, William Everett.....St. Clair
Kitchen, William M. .....Kansas City
Klaff, Daniel D. .....St. Louis
Klebba, Larry B. .....Jefferson City
Klein, Andrew G. .....St. Louis
Klein, Arnold G. .....Address Unknown
Klein, Bert H. .....St. Louis
Klein, Edward H. .....Kansas City
Klein, Harry A. .....St. Louis
Kleinschmidt, Clinton .....St. Louis
Klemme, Roland M. .....St. Louis
Klenk, Charles L. .....St. Louis
Klepinger, Dayton P. .....Kansas City
Klingner, George M. .....Springfield
Klinkerfuss, George Henry.....St. Louis
Klippel, Allen P. .....St. Louis
Klippel, Bernhardt, W. .....St. Louis
Klippel, Edward T. .....St. Louis
Kloecker, Herman J. .....Overland
Kloeppel, Carl F. .....Kirkwood
Kloepper, Victor F. .....St. Louis
Knabb, Arthur D. .....Springfield
Knabb, Harris .....Springfield
Knabb, Henry F. .....Springfield
Knabb, Kenneth E. .....Springfield
Knapp, Rudolph .....Golden City
Knappenberger, George E. ..Kansas City
Kneal, E. Ellsworth.....St. Louis
Kneibert, Fred Louis.....Poplar Bluff
Knepper, P. A. .....St. Joseph
Knerr, Ellsworth B. ..Address Unknown
Knese, Luke A. .....St. Louis
Knight, John S. .....Kansas City
Knight, Lyle B. .....Lees Summit
Knight, William A. ...Minneapolis, Minn.
Knight, William A., Jr. .....St. Louis
Knoch, H. Kermit.....Kansas City
Knoke, Frederick William, Jr. .....
.....Grosse Pointe Park, Mich.
Knowles, Harry P. .....Taney
Knowles, Roy F. .....Rolla
Knox, A. C. .....Kansas City
Knox, Earl R. .....North Kansas City
Koch, Otto W. .....St. Louis
Koch, Robert E. .....Clayton
Koeb, Roland A. .....St. Louis
Koehler, Charles A. .....Kansas City
Koenig, Frank J. .....Kansas City
Koenig, George H. .....Kirkwood
Koenig, Karl F. .....St. Louis
Koessel, Arthur W. .....St. Louis
Kohler, Eugene J. .....St. Louis
Kohler, Louis H. .....St. Louis
Kohn, Cecil M. .....Kansas City
Konzelmann, John A. .....St. Louis
Koon, Bernard T. .....St. Louis
Kopp, Jules H. .....St. Louis
Koppenbrink, Walter E. .....Higginsville
Koritschoner, Robert .....Kansas City
Korth, William M. .....Kansas City
Kotkis, A. J. .....St. Louis
Kotner, Lawrence M. .....St. Louis
Kountz, William B. .....St. Louis
Kouri, Martin F. .....St. Louis
Kovitz, Louis .....Kansas City
Kowert, Edward H. .....St. Louis
Kraft, Edward O. .....New York, N. Y.
Kraft, Jacob .....Kansas City
Kramer, Fred .....St. Louis
Kramolowsky, Helmuth H. .....St. Louis
Kranson, Seymour J. .....Independence
Krause, G. Lynn.....St. Louis
Krause, Irl B. .....Jefferson City
Krebs, Frank J. V. .....St. Louis
Krebs, Joseph M. .....New York, N. Y.
Krebs, Otto S. .....St. Louis
Krenning, William G. .....St. Louis
Kroeger, George B. .....St. Louis
Krueger, Owen W. .....Kansas City
Kubitschek, Paul F. .....St. Louis
Kuenkel, Victor H. .....St. Louis
Kuhn, John R., Jr. .....Joplin
Kuhn, William F., II.....Kansas City
Kulowski, Jacob .....St. Louis
Kuritz, Albert B. .....St. Louis
Kurth, Robert K. .....St. Louis
Kurtzeborn, Edwin E. .....St. Louis
Kurz, Rudolph F. .....St. Louis
Kuttner, Marianne .....St. Louis
Kyger, E. Ross .....Kansas City
Kyger, Fred B. .....Kansas City
Kyner, Thomas A. .....Kansas City

—L—

Lachance, Leopold .....Centralia
Lacy, N. Eugene.....Kansas City
Laffoon, France L. .....Raytown
LaHue, L. D. .....Butler
Lakaytis, Charles A. .....Kansas City
Lamar, Robert F. .....Kansas City
Lamar, Frederick C. .....Kansas City
Lamb, Harvey D. .....St. Louis
Lambert, Marian .....Princeton
Lamson, Roy C. .....Neosho
Landau, Daniel B. .....Hannibal
Landree, James C. .....St. Louis
Lane, Clinton W. .....St. Louis
Laney, Ronald L. .....Joplin
Langan, William J., Jr. .....St. Louis
Lange, Adolph C. .....St. Louis
Langenbach, Alfred M. .....St. Louis
Langford, E. K. .....Platte City
Langhus, Melvin O. ..North Kansas City
Langston, W. R. .....Springfield
Laning, J. H. .....Kansas City
Lanning, Richard Charles..Ste. Genevieve
Lanning, Robert J. .....Hannibal
Lanning, Robert W. .....Ste. Genevieve
Lansche, Elmer Arnold.....St. Louis
Lanzafame, S. Anthony.....Farmington
Lapp, Harry C. .....Kansas City
Lapp, John G. .....Kansas City
Larimore, Joseph W. .....St. Louis
Larsen, Kenneth V. .....St. Louis
Latham, Kenyon S. .....California
Latham, Logan L. .....California
Lau, Gustav A. .....St. Joseph
Laurenzana, Frank Paul.....Kansas City
Lawless, Charles L. .....Marshall
Lawrence, John Richard.....Marshall
Lawrence, John V. .....St. Louis
Laws, Clarence J. .....Princeton
Lawton, Thomas P. .....St. Louis
Layton, Ira C. .....Kansas City
Leaming, H. A. .....Joplin
Leavy, Charles A. .....St. Louis
LeCompte, Elmo M. ....Brookline Station
Lederman, Joseph .....St. Louis
Lee, A. E. .....Illmo
Lee, Chester E. .....Kansas City
Lee, Elbert J., Jr. .....St. Louis
Lee, George C. .....Kansas City
Leech, Charles A. .....Columbia
Leech, Maurice P. .....Fayette
LeFevre, Harry M. .....Shelbyville
LeHew, Robert M. ....Address Unknown
Lehner, Richard L. .....Kansas City
Leidler, Franz .....St. Louis
Leifer, William W. .....Kansas City
Leighton, William E. .....St. Louis
Leitch, Cecil George.....Kansas City
Leitz, Frank Bantley.....Kansas City
Lembeck, Joseph A. .....St. Louis
Lemen, Lois E. .....Columbia
Lemoine, Albert N. .....Kansas City
Lemoine, A. N., Jr. .....Kansas City
Lemmon, George B. .....Springfield
Lemmon, G. Bruce, Jr. .....Springfield
LeMone, David V. .....Columbia
Lentz, Harold C. .....Neosho
Leonard, Ward H. .....Kansas City
Lerner, Abe F. .....University City
Leslie, Charles H. .....Kirkwood
Leslie, James F. .....Springfield
Leslie, J. T. .....Jefferson City
Leslie, Walter L. .....Russellville
Lester, Rollo B. .....Nevada
Levey, Harry B. .....Kansas City
Levey, Simon A. .....St. Louis
Levin, M. J. .....Brentwood
Levin, Sidney Saul.....St. Louis
Levy, Irwin .....St. Louis
Lewellen, Charles H. .....Louisiana
Lewellen, Charles P. .....Louisiana
Lewis, Andrew L. .....Sumner
Lewis, William E. .....Kansas City
Leydig, Stanley M. .....St. Louis
Lieb, Otto .....St. Louis
Lieberman, B. Albert .....Kansas City
Lieberman, B. Albert, Jr. ....Kansas City
Liersch, Joseph C. .....Kansas City
Liese, Grover B. .....St. Louis
Liggett, Hiram S. .....St. Louis
Likos, Joseph J. .....Webster Groves
Lillard, Archie H. .....LaBelle
Lilly, Terry E. .....Kansas City
Limbaugh, Walter R. .....Hayti
Lindeman, Carl H. .....St. Louis
Lindquist, Carl N. .....Kansas City
Lindsay, John W. .....Conway
Link, Vance Eugene.....Independence
Linton, C. S. .....Kennett
Lipman, Bernard S. .....St. Louis
Lischer, Carl E. .....Webster Groves
Lissack, Edmund .....Concordia
Liston, Odus .....Oakgrove
Littauer, David .....Kansas City
Littmann, Lewis E. .....Clayton
Locker, George E. .....Iantha
Lockwood, Ira H. .....Kansas City
Lockwood, W. E. .....Slater
Loeb, Virgil, Jr. .....St. Louis
Loeb, Virgil .....St. Louis
Loeffel, Ellen S. .....St. Louis
Logan, James A. .....Warsaw
Lohr, Curtis H. .....St. Louis
Londe, Sol .....St. Louis
Long, David S. .....Harrisonville
Long, Forrest C. .....Savannah
Long, Frank B. .....Sedalia
Longfield, Fred J. .....Lathrop
Lonsway, Maurice J. .....Clayton
LoPiccolo, Vincent J. .....St. Louis
Loughead, John R. .....St. Louis
Love, Joseph Wooding .....Springfield
Love, Joseph W. .....Nevada
Love, Walter S. .....Nevada
Loveland, William S. .....Joplin
Loving, B. Rush .....Ballwin
Lowe, Horace A. .....Springfield
Lowe, Horace A., Jr. .....Brentwood
Lowenstein, Paul S. .....St. Louis
Lowrey, Ford Jackson.....Kansas City
Lowry, Charles F. .....Kansas City
Lowry, Henry L. .....Tindall
Loyd, H. O. .....Jefferson City
Lucas, John H. .....Brookfield
Lucas, William B. .....Mendon
Lucido, Joseph L. .....St. Louis
Lucke, Eugene M. .....Hannibal
Luckey, Horace L. .....Maplewood
Lucy, Robert E. .....Muncie, Ind.
Luedde, Fullerton, W. .....St. Louis
Luedde, Philip S. .....St. Louis
Luedde, William H. .....St. Louis
Luman, Frank E. .....Edina
Lund, Herluf G. .....St. Louis
Luppens, Albert F. .....Kansas City
Lusk, Charles A. .....Butler
Lusk, Charles A., Jr. .....Butler
Luten, Drew W. .....St. Louis
Luten, Joseph B. .....Caruthersville
Luter, Carter W. .....Butler
Lux, Paul .....Kansas City
Lyddon, Harold R., Jr. .....Kansas City
Lyman, Edward H. .....St. Louis
Lyman, Harry W. .....St. Louis
Lytle, William R. .....Waynesville
Lyttle, G. C. .....St. Louis
Lytton, William B. .....Clayton

—M—

McAdam, C. Rush.....St. Louis
McAdam, James D. .....Prairie Hill
McAlester, Andrew W., Jr. ...Kansas City
McAlester, Andrew W., III...Kansas City
McAllister, Max F. .....Kirkwood
McArtor, Thomas R. .....Browning
McBratney, Emmett W. .....St. Louis
McBurney, C. A. .....Slater
McCall, Edwin L. .....Brentwood
McCall, Green D. .....Fulton
McCall, William K. .....Laddonia
McCallum, A. J. C. .....Cassville
McCalman, Ira J. .....Kansas City
McCandless, Oliver H. .....Independence
McCarroll, Henry R. .....St. Louis
McCarthy, Eugene F. .....St. Louis
McCarthy, Thomas D. .....Lemay
McCarthy, William F. .....Independence
McCarty, Virgil Warren.....Kansas City
McCaughan, John M. .....St. Louis
McClanahan, Robert C. .....Kansas City
McClure, Thomas C. .....Sikeston
McComas, Arthur R. .....Sturgeon
McCorkle, E. Lee.....Marshall
McCormick, F. L. .....Moberly
McCormick, James E. ..North Kansas City
McCracken, Samuel R., Excelsior Springs
McCraw, Doyle C. .....Bolivar
McCrory, James L. .....Santa Fe, N. M.
McCubbin, Clarence Roy.....Kansas City
McCubbin, J. Burleigh.....Fulton
McCulloch, Hugh .....St. Louis
McDonald, Eugene F. .....Jackson
McDonald, George H. .....St. Louis
McDonald, George J. ..Address Unknown

McDonald, Wilbur P. ..... St. Joseph
McDonnell, John F. ..... Kansas City
McDowell, Frank S. ..... St. Louis
McElroy, Glenn L. .... Address Unknown
McElvain, Robert C. ..... St. Louis
McFadden, F. Ross ..... St. Louis
McFadden, James F. ..... St. Louis
McFarland, A. Sidney ..... Rolla
McFarland, M. D. ..... Kansas City
McGennis, Patrick ..... St. Louis
McGinnis, Byron J. ..... St. Louis
McGinnis, William F. ..... St. Louis
McGlothlan, Arthur B. ..... St. Joseph
McGuire, William A. ..... St. Louis
McHale, Thomas C. ..... Kansas City
McHaney, John W. ..... Jefferson City
McIntyre, Emery J. ..... Carthage
McKee, Joseph W. ..... Kansas City
McKinney, Ralph F. ..... Warrensburg
McKinstry, Karl V. ..... DeSoto
McKnelly, William Von .... Jefferson City
McLean, Royal C. ..... Kirkwood
McLeod, John ..... Kansas City
McLoon, Mary A. ..... St. Louis
McMahon, Alphonse ..... St. Louis
McMahon, Bernard J. ..... St. Louis
McMillan, Thomas E. ..... Kansas City
McMurray, Herbert C. ..... Wentzville
McMurry, Marvin C. ..... Paris
McNalley, Frank P. ..... St. Louis
McNamee, Owen J. ..... St. Louis
McNamee, William Francis ..... St. Louis
McNay, Albert L. ..... Pacific
McNearney, Joseph ..... St. Louis
McNew, William T. ..... Carthage
McPheeters, James W. ..... Poplar Bluff
McPheeters, J. W., Jr. ..... Poplar Bluff
McPherson, Owen P. ..... Kansas City
McRaven, Claude ..... Marston
McShane, Quentin W. ..... St. Louis
McSwiney, John G. ..... St. Louis
McVay, James R. ..... Kansas City
Maas, Hermann ..... St. Louis
Macauley, Bernard Joseph ..... Gerald
MacBryde, Cyril M. ..... St. Louis
MacDonald, John W. ..... St. Louis
Macdonald, William C. ..... St. Louis
Macdonnell, C. R. ..... Marshfield
MacInnis, Florence E. ..... Kansas City
Mack, Mary L. ..... Joplin
Mackey, John F., Jr. ..... St. Louis
Macko, Joseph R. ..... St. Louis
Maclean, John A. ..... Ventura, Calif.
Macnish, James M. ..... St. Louis
Macon, William L., Jr. ..... St. Louis
Maddox, John D. ..... Joplin
Maddux, William Paul ..... Springfield
Magee, Charles D. ..... St. Louis
Magidson, Joseph ..... St. Louis
Magness, Guy N. ..... University City
Mairs, Edgar J. ..... Trenton
Maizus, Saul Hyman ..... St. Louis
Major, Herman S. ..... Kansas City
Malles, Albert C. ..... St. Louis
Mallette, Cyrus ..... Crocker
Malley, John A. ..... Quincy, Ill.
Maness, Charles E. ..... Neosho
Manion, Peter J. ..... St. Louis
Mansbacher, Kurt ..... St. Louis
Mansur, Edward E. ..... Jefferson City
Manting, George ..... St. Louis
Mantz, Herbert L. ..... Kansas City
Maples, F. H. ..... Marshall
Marbury, Benjamin E. .. New York, N. Y.
Marcus, Morris D. ..... St. Louis
Margulis, Abraham A. ..... St. Louis
Markel, Arthur D. ..... Poplar Bluff
Marks, Mark M. ..... Kansas City
Marmor, William A. ..... St. Louis
Marshall, Alfred H. ..... Charleston
Marshall, Cameron F. ..... Kansas City
Marshall, W. J. ..... Springfield
Marston, Warren G. ..... St. Louis
Martin, Albert J. ..... East Prairie
Martin, Aretus D. ..... Sikeston
Martin, Charles E. ..... St. Louis
Martin, Charles P. ..... St. Louis
Martin, F. A. ..... Columbia
Martin, Forrest Logan ..... Nevada
Martin, James H. ..... Ironton
Martin, Maynard W. ..... St. Louis
Martin, Raymond T. ..... St. Louis
Martin, Thomas M. ..... St. Louis
Martin, Robert E. ..... Senath
Martin, Wilfred E. ..... Odessa
Marty, L. A. ..... Lakeview Heights
Mason, Roy E. ..... St. Louis
Massie, Edward ..... St. Louis
Masters, W. H. ..... St. Louis
Mastin, E. Vernon ..... St. Louis
Mathae, George H. ..... St. Louis
Matteson, Frank B. ..... Grant City
Matthews, Gilpin, L. ..... Beaufort
Matthews, John G. ..... St. Louis
Mattis, Robert D. ..... St. Louis
Maughs, Sydney B. ..... St. Louis
Max, C. O. C. ..... St. Louis
Max, Paul F. ..... St. Louis
Maxey, Hugh W. ..... Jefferson City
Maxson, T. Reed ..... Warrensburg
Maxwell, Richard W. ..... St. Louis
May, Benj. F. ..... St. Louis
Mayer, Leo L. ..... St. Louis
Mays, Frank G. ..... Washington
Mays, Joseph W. ..... St. Joseph
Mead, Samuel T. ..... Slater
Meador, James R. ..... Clayton
Medler, Francis J. ..... St. Louis
Mehan, George T. ..... St. Louis
Meinberg, William H., Jr. ..... St. Louis
Meiners, Edwin P. ..... St. Louis
Meinhardt, Victor J. ..... St. Louis
Meisenbach, A. Edward ..... St. Louis
Melchert, Harold B. ..... Springfield
Melick, William F. ..... St. Louis
Mellies, Chester J. ..... Sikeston
Mellies, Eugene G. ..... St. Louis
Mellies, George A. ..... St. Louis
Meluney, S. E. ..... St. Joseph
Mendonsa, Elsa L. ..... University City
Mendonsa, Lawrence E. ..... St. Louis
Menefee, Buell ..... Montgomery City
Menown, Roland R. ..... St. Louis
Meredith, Arnold L. ..... Prairie Home
Meredith, Guy I. ..... Joplin
Meredith, Joseph J. ..... Cleveland, Ohio
Merenda, Sam J. ..... St. Louis
Merklin, Anton L. ..... St. Louis
Merriam, Wallace ..... Rockaway Beach
Merriman, Clay S. ..... Kansas City
Merritt, Burch A. ..... St. Louis
Merz, Jean J. ..... St. Louis
Metz, Charles O. ..... St. Louis
Meyer, Claude B. ..... Springfield
Meyer, Curtis A. ..... St. Louis
Meyer, Harry H. ..... St. Louis
Meyer, Herman M. ..... St. Louis
Meyer, Oscar D. ..... St. Louis
Meyer, Theodore R. ... Address Unknown
Meyerhardt, Milton H. ..... St. Louis
Meyers, Montague M. .. Address Unknown
Meyn, Werner P. ..... Altenburg
Mezera, Raymond A. ..... St. Louis
Michael, Vernon E. ..... St. Louis
Michaelree, John F. ..... St. Louis
Middleman, Isadore C. ..... St. Louis
Middleton, James ..... Arlington, Va.
Mier, Thomas M. ..... St. Louis
Milder, Benjamin ..... St. Louis
Miller, Alfred F. ..... Knoxville, Tex.
Miller, Charles Waugh ..... St. Louis
Miller, Clint L. ..... Lees Summit
Miller, Clyde S. ..... Waynesville
Miller, Dan Tucker ..... St. Louis
Miller, D. Herbert ..... Muskogee, Okla.
Miller, Eugene A. ..... St. Joseph
Miller, Gerald L. ..... Kansas City
Miller, H. Edward ..... St. Louis
Miller, Herbert S. ..... Sikeston
Miller, Howard S. ..... Macon
Miller, Hugh ..... Kansas City
Miller, Oliver Jerome ..... Perryville
Miller, Ralph M. ..... St. Charles
Miller, Richard C. ..... Kansas City
Miller, Wade Hampton ..... Kansas City
Miller, Walter P. ..... Kansas City
Milligan, Roy H. ..... St. Louis
Millikin, Lester A. ..... St. Louis
Milster, Clyde R. ..... St. Louis
Miltenberger, Val E. ..... Kirksville
Minton, Robert S. ..... St. Joseph
Minton, William H. ..... St. Joseph
Missey, Wilburn C., Jr. ..... St. Louis
Mistachkin, Norman L. ..... St. Louis
Mitchell, Ernest ..... Joplin
Mitchell, John E. ..... Sedalia
Mitchell, Robert H. ..... Kansas City
Mitchell, Samuel E. ..... Malden
Mixson, William C. ..... Kansas City
Moeller, Carl E. ..... St. Louis
Moennighoff, Fritz J. ..... Monett
Molholm, Hans B. ..... St. Louis
Mollica, Stephen G. ..... Kansas City
Monahan, Elmer P. ..... Kansas City
Monroe, Alfred E. ..... Sedalia
Montani, Charles ..... St. Louis
Montgomery, Enoch A. ..... Unionville
Montgomery, James Gordon, Kansas City
Montgomery, John S. ..... Milan
Mooney, Justin Loeb ..... Kansas City
Mooney, Marcel L. ..... Kansas City
Moore, Ernest M. ..... Higginsville
Moore, Ernest M., Jr. ..... Higginsville
Moore, Harry G. ..... St. Louis
Moore, Josiah G. ..... Chino, Calif.
Moore, Louis T. ..... Kansas City
Moore, Neil S. ..... St. Louis
Moore, Robert A. ..... St. Louis
Moore, Robert A. ..... Kansas City
Moore, Sherwood ..... St. Louis
Moore, Stanley W. ..... Vandalia, Ill.
Moore, Walter L. ..... Clayton
Moore, Walter Roger ..... St. Joseph
Moore, William E. ..... Normandy
Moragues, Vicente ..... St. Louis
Moreland, George H. ..... Kansas City
Morest, F. Stanley ..... Kansas City
Morfit, John C. ..... Clayton
Morgan, David B. ..... Kansas City
Morgan, Donald Nye ..... Boonville
Morley, Frank R. ..... Sedalia
Morrin, Kevin C. ..... St. Louis
Morris, Harvey E. ..... St. Louis
Morris, Mary E. ..... St. Louis
Morrow, Raymond L. ..... Kansas City
Morroway, James H. ..... St. Joseph
Morse, Frank L. ..... St. Louis
Morse, Marvin ..... St. Joseph
Morton, Paul C. ..... St. Louis
Moskop, Peter G. ..... St. Louis
Moss, Paul ..... Kansas City
Motley, Elliot R. ..... Kinderhook, Ill.
Motley, Hurley L. ..... Philadelphia, Pa.
Mott, James R. ..... Hartville
Motzel, Albert J. ..... St. Louis
Mountjoy, Grace S. ..... St. Louis
Mowrey, William O. ..... St. Louis
Muckerman, Richard I. C. ..... Clayton
Mudd, J. Gerald ..... Wichita, Kan.
Mudd, James L. ..... Wichita, Kan.
Mueller, Charles B. .... Address Unknown
Mueller, Clarence E. ..... St. Louis
Mueller, Joseph A. ..... St. Louis
Mueller, Morris A. ..... Ladue
Mueller, Ralph Edward ..... Kansas City
Mueller, Robert ..... St. Louis
Mueller, Robert J. ..... St. Louis
Mueller, W. K. ..... St. Louis
Muench, Albert Harry ..... St. Joseph
Muench, Ludwig O. ..... Washington
Muether, Rayond O. ..... St. Louis
Mullarky, Wilbur A., San Francisco, Calif.
Mullen, Leo M. ..... Kansas City
Mullen, Park C. ..... Portageville
Mulligan, Leo V. ..... St. Louis
Mullinax, Orr ..... St. Joseph
Mundy, H. F. ..... St. Joseph
Munsch, Augustin P. ..... St. Louis
Munsch, Girard A. ..... St. Louis
Murphy, Bernard L. ..... Hannibal
Murphy, Franklin D. ..... Kansas City
Murphy, George J. ..... Omaha, Nebr.
Murphy, James P. ..... St. Louis
Murphy, John C. ..... St. Louis
Murphy, John P. ..... St. Louis
Murphy, John Patrick ..... St. Louis
Murphy, John Patrick, Jr. .... St. Louis
Murphy, Joseph G. ..... Palestine, Tex.
Murphy, Paul ..... St. Louis
Murphy, Robert J. ..... Kansas City
Murray, John Watts ..... Sedalia
Murray, Lotis V. ..... Pleasant Hill
Murray, Louis F. ..... St. Louis
Musgrave, David E. .... Excelsior Springs
Musick, James D. ..... Springfield
Mutshnick, Clara P. ..... St. Louis
Myer, Max W. ..... St. Louis
Myers, Benjamin Lee ..... Kansas City
Myers, Daniel W. .... Address Unknown
Myers, E. Lee ..... St. Louis
Myers, George T. ..... Macks Creek
Myers, James M. ..... Rolla
Myers, John L. ..... Kansas City
Myers, John Simeon ..... Kansas City
Myers, Myron A. ..... Kansas City
Myers, Ralph R. ..... Address Unknown
Myers, Robert M. ..... Kansas City
Myers, Roy E. ..... Joplin
Myers, W. Eugene ..... Kansas City
Myers, Wilson A. ..... Kansas City

—N—

Nakada, James Robert ..... St. Louis
Napper, Marvin L. ..... Springfield
Nash, W. Hampton ..... St. Louis
Neal, M. Pinson ..... Columbia
Needels, Orval T. ..... Webb City
Neff, Robert L. ..... Joplin
Neils, Julius K. ..... Clayton
Neilson, Arthur W. ..... St. Louis
Neilson, Charles H. ..... St. Louis
Neis, Harry B. ..... Harrisonville
Neller, James L. ..... Los Angeles, Calif.
Nelson, Charles S. ..... Kansas City
Nelson, James M. ..... San Carlos, Calif.

Nelson, William ..... St. Louis
Nemec, Stanley S. ..... St. Louis
Nemours, Paul R. ..... St. Louis
Nester, Charles A. ..... St. Louis
Nester, Gerard A. ..... St. Louis
Neubauer, Darwin W. ..Kalamazoo, Mich.
Neubeiser, Ben L. ..... St. Charles
Neudorff, Louis G. ..... St. Joseph
Neuhoff, Fritz ..... St. Louis
Neun, W. F. ..... St. Louis
Neunlist, Percy C. ..... Old Monroe
Newkirk, Richard C. ..... Joplin
Newlon, John S. ..... Nevada
Newman, George W. ..... Cassville
Newman, Harold G. ..... St. Louis
Newman, Mary G. N. ..... Cassville
Newton, Henry O. ..... La Plata
Nichols, Arthur L., Jr. ..... Kansas City
Nichols, Charles B. ..... Auxvasse
Nichols, Frank J. ..... Farmington
Nicholson, Clarence M. .....
..... St. Petersburg, Fla.
Nickell, L. O. ..... Moberly
Nickson, Charles E., Jr. .... Independence
Nicolai, Charles H. ..... Clayton
Niedermeyer, Edward L. ..... Roanoke
Niederwimer, John ..... Koch
Nienstedt, E. J. ..... Sikeston
Nifong, Frank G. ..... Columbia
Nigro, D. M. ..... Kansas City
Nigro, E. Robert ..... Kansas City
Nigro, Joseph Albert ..... Kansas City
Nisbet, Eliga B. ..... Odessa
Nix, Winston K. ..... Marshall
Nixon, Edward E. ..... Gallatin
Nolan, Charles J. ..... St. Louis
Nolan, James F. ..... St. Louis
Noller, Henry W. ..... St. Louis
Noltensmeyer, Milton H. ..... Lamar
Norberg, George B. ..... Kansas City
Norman, Robert M. ..... Ava
North, William R. ..... Webster Groves
Northup, Glenn R. ..... St. Louis
Norton, Harry B. ..... Hannibal
Norton, William H. ..... St. Louis
Nulton, Ida May ..... Lancaster
Nunn, Pat Morris .... Kansas City, Kan.
Nussbaum, Paul B. ..... Cape Girardeau
Nussbaum, Robert A. ..... St. Louis
Nye, Robert S. ..... St. Louis

—O—

Obermeyer, Charles G. ..... St. Louis
O'Brien, Edward C. ..... St. Louis
O'Brien, Harry Francis ..... Mexico
O'Brien, James A. ..... Springfield
O'Brien, J. R. ..... Bolivar
O'Brien, Leo Aloysius ..... Kansas City
O'Brien, Robert M. ..... St. Louis
Obrock, Louis C. ..... St. Louis
Ockerblad, Nelse F. ..... Kansas City
O'Connell John ..... Overland
O'Connell, P. J. ..... Kansas City
O'Dell, Timothy T. ..Huntington, W. Va.
O'Donoghue, James ..... St. Joseph
O'Dowd, James A. ..... St. Louis
Oehler, William F. ..... Cape Girardeau
Ogilvie, John H. ..... Kansas City
Oglevie, Rial R. ..... Kansas City
Ogura, Joseph H. ..... St. Louis
O'Keefe, C. D. ..... St. Louis
Olmsted, William H. ..... St. Louis
O'Malley, Eugene J. ..... St. Louis
O'Neil, James H. ..... Kansas City
O'Neill, John B. ..... St. Louis
Oppenheimer, Henry E. ..... St. Louis
O'Reilly, Daniel E. ..... St. Louis
Orenstein, Joseph M. ..... St. Louis
Orgel, M. Norman ..... St. Louis
Ormsbee, James L. ..... Springfield
Osborne, Charles D. ..... Sedalia
Osgood, George M. ..... Kansas City
Ossman, Julian A. ..... Jefferson City
O'Sullivan, George A. ..... St. Louis
Ott, Harold J. ..... Maplewood
Ottman, Philip A. ..... Marceline
Overholser, Milton David ..... Columbia
Owen, William C. ..... St. Louis
Owens, Bert O. ..... St. Louis
Owens, Graham Joseph ..... Kansas City
Owens, Hugh H. ..... Kansas City
Owens, Michael J. ..... Kansas City
Owens, Patrick H. ..... Kansas City
Ozias, Charles R. ..... Kansas City

—P—

Paddock, Richard ..... Clayton
Pakula, Sidney ..... Kansas City
Pallett, Harold A. ..... Kansas City
Pampush, James J. .....
..... Bremerhaver, Germany
Paquin, Albert J., Jr. ..... Bisbee, Ariz.
Parato, John M. ..... Sullivan
Pareira, Morton D. ..... St. Louis
Park, George M. ..... Eureka
Park, William I., Jr. ..... Springfield
Parker, Elmer L. ..... Kansas City
Parker, H. Graham ..... Platte City
Parker, Harry F. ..... Warrensburg
Parker, Hubert M. ..... Kansas City
Parker, John Z. ..... Pattonsburg
Parker, Joseph W. ..... Kansas City
Parker, Rainey C. ..... Steelville
Parker, Robert H. ..... North Kansas City
Parker, Roy H. ..... Hunnewell
Parker, William ..... St. Louis
Parkhurst, Charles L. ..... Houstonia
Parman, David R. ..... University City
Parsons, Charles R. ..... Sweet Springs
Parsons, Eugene O. ..... Kansas City
Passanante, Bartholomew M. ... St. Louis
Passman, Harold ..... Kansas City
Pate, O. S. ..... North Kansas City
Patterson, Henry H. ..... Braymer
Patterson, William R. ..... Warrensburg
Patton, Fred W. ..... Mt. Vernon, Ill.
Patton, John F. ..... St. Louis
Patton, Leslie E. ..... St. Louis
Paul, John B. ..... Kansas City
Paul, Thomas M. ..... St. Joseph
Pawol, S. E. ..... St. Louis
Payne, Bryan T. ..... Lexington
Payne, Richard J. ..... St. Louis
Pearse, Roy W., Jr. ..... Nevada
Pearson, Donnell M. ..... Louisiana
Pearson, Paul E. ..... Kansas City
Peck, Chester R., Jr. ..... Kennett
Peckham, John W. ..... St. Louis
Peden, Joseph C. ..... St. Louis
Peeler, James O. ..... St. Louis
Peelor, Edwin C. ..... Clinton
Peete, Don Carlos ..... Kansas City
Pelz, Mort D. ..... St. Louis
Pendleton, George F. ..... Kansas City
Penn, Robert M. ..... Silex
Penney, David L. ..... St. Louis
Perll, Maurice F. ..... Kansas City
Perll, Rita D. ..... Kansas City
Pernoud, Flavius G. ..... St. Louis
Pernoud, Flavius G., Jr. ..... St. Louis
Pernoud, Michael F. .... Greenville, S. C.
Perry, David C. ..... Mound City
Perry, John M. ..... Princeton
Perry, Ralph ..... Kansas City
Persons, Robert C. ..... Maryville
Peters, Arthur J. ..... St. Louis
Peters, Augustus W. ..... St. Louis
Peters, Melvin L. ..... Cameron
Petersen, Fenton J. ..... St. Louis
Petersen, H. E. ..... St. Joseph
Peterson, Milton C. ..... Kansas City
Petry, Ezra L. ..... Kansas City
Pfeifer, Oliver C. ..... St. Louis
Phelps, Charles Ray ... Address Unknown
Pfuetze, Edwin L. ..... Kansas City
Phelan, Emma ..... St. Louis
Phillips, Hanford ..... St. Louis
Phipps, George W. ..... Caruthersville
Pickard, M. W. ..... Tucson, Ariz.
Pickard, Nicholas S. ..... Kansas City
Pickens, E. Allen ..... Springfield
Pickens, Edgar E. ..... Kansas City
Pickett, Clarence P. ..... Princeton
Pickett, F. J. ..... Vandalia, Ill.
Pickrell, Claude D. ..... St. Louis
Piekarski, Anthony A. ..... St. Louis
Pieper, Henry G. ..... St. Louis
Pierron, John B. ..... Kansas City
Pinion, John R. ..... Caruthersville
Pinkston, Omar W. ..... Kansas City
Piper, Donald K. ..... Kansas City
Pipkin, F. Garrett ..... Kansas City
Pipkin, Walter D. ..... Monroe City
Pittam, J. Thomas ..... Kansas City
Pittam, Radford F. ..... Kansas City
Pitzman, Marsh ..... St. Louis
Plag, Albert F. ..... St. Louis
Platt, Paul C. ..... Kansas City
Platz, John H. ..... Carrollton
Pletcher, K. E. .... Randolph Field, Tex.
Ploch, Bernard ..... St. Louis
Ploehn, Emma ..... St. Louis
Plumlee, William C. ..... Springfield
Plummer, Grover C. ..... Buffalo
Plumpe, W. Tupper ..... St. Louis
Poe, John S. ..... New York, N. Y.
Polk, George M. ..... Independence
Pollock, Ellis L. ..... St. Louis
Pollock, Leo Howard ..... Kansas City
Pollock, Maxwell A. ..... St. Louis
Poor, Carl W. ..... Diamond
Poorman, Bert A. ..... Kansas City
Pope, Nathan K. ..... Springfield
Popejoy, H. R. ..... California
Popp, Edward M. ..... Marston
Porter, Louis ..... Kansas City
Porter, Russell C. ..... North Kansas City
Portuondo, Bonaventura C. .... St. Louis
Post, Cyril A. ..... Poplar Bluff
Post, Lawrence T. ..... St. Louis
Post, M. Hayward, Jr. ..... St. Louis
Post, Winfred L. ..... Joplin
Potashnick, Robert ..... St. Louis
Pote, Thomas B. ..... St. Louis
Potter, Allen B. ..... St. Louis
Potter, Lee G. ..... Kansas City
Potter, Reese ..... Webster Groves
Potter, Thompson E. ..... St. Joseph
Powell, Carl A. ..... St. Louis
Powell, Earl A. ..... St. Louis
Powell, Rudolph V. ..... St. Louis
Powers, Evertt ..... Carthage
Powers, John M. ..... Kansas City
Powers, Pierce W. ..... St. Louis
Pranger, Sylvester H. ..... St. Louis
Prather, Roy William ... Excelsior Springs
Prentiss, Harry S. ..... Kansas City
Presnell, Charles C. ..... Charleston
Presnell, Cleitus A. ..... St. Louis
Pressnell, George R. ..... Kennett
Press, Maurice J. ..... St. Louis
Preston, Albert, Jr. ..... Kansas City
Price, Robert P. ..... Fulton
Price, William Phillip ..... Oswego, Kan.
Prichard, John A. ..... Overland
Printz, Joseph H. .... Marsh Field, Calif.
Printz, Otto Jack ..... Kansas City
Pritchett, Paul L. ..... Webb City
Probstein, Jacob G. ..... St. Louis
Proctor, Carter A. ..... Sullivan
Proetz, Arthur W. ..... St. Louis
Proud, G. O'Neil ..... St. Louis
Pruett, Burchard S. ..... St. Louis
Pruett, Daniel S. ..... St. Louis
Pruett, Hubert S. ..... St. Louis
Pryor, Harry B. ..... Ashland
Puckett, Charles L. ..... St. Louis
Puckett, Cordelia ..... St. Louis
Pulliam, Madison J. ..... St. Louis
Purcell, Harry K. ..... St. Louis
Putnam, John A. ..... Carthage
Pyne, Herbert S. ..... St. Louis
Pyrtle, James R. ..... Centerville

—Q—

Quarles, E. Bryan ..... St. Louis
Quinn, Abram T. ..... St. Louis
Quirin, Warren S. ..... St. Louis
Quistgard, Paul Cameron .... Kansas City

—R—

Rader, Ada Brainard ..... Martin City
Raemdonck, Alphonse J. ..... St. Louis
Ragan, Romulus C. ..... Kansas City
Ragsdale, George M. ..... Paris
Rainwater, E. H. ..... Springfield
Raitt, Grant P. ..... Billings, Mont.
Ramos, Raoul L. ..... St. Louis
Randall, Leslie ..... Licking
Rannie, Paul R. ..... Independence
Rassieur, Louis ..... St. Louis
Rauschelbach, Oscar R. ..... Rhineland
Rawlins, Kelly ..... Holden
Ray, Richard H. ..... St. Louis
Ready, James H. ..... Florissant
Redmond, William ..... St. Joseph
Reed, Carl H. ..... Carrollton
Reed, Henry L. ..... Licking
Reese, A. Victor ..... Webster Groves
Reeves, George W. ..... Fulton
Reh, Edward P. ..... St. Louis
Reich, Harry A. ..... St. Louis
Reich, Oliver F. ..... Kimmswick
Reiches, Aaron J. ..... St. Louis
Reichman, John J. ..... Hannibal
Reid, Charles T. ..... Joplin
Reid, James A. ..... Marshall
Reilly, Leo J. ..... St. Louis
Reilly, Pierce J. ..... St. Louis
Reilly, Terrance M. ..... St. Louis
Reim, Hugo ..... St. Louis
Reinhard, Edward Humphrey .....
..... Webster Groves
Reis, Carl J. ..... St. Louis
Reitz, Carl H. ..... Kansas City
Remley, George C. ..... Kansas City
Rendleman, George F. ..... St. Louis
Repetto, Albert M. ..... St. Louis
Reser, Thomas S. ..... Cole Camp
Resnikoff, Lewis E. ..... St. Louis
Reutter, Garfield A. ..... Rockport
Reuter, Louis A. ..... St. Louis
Reynolds, Fred ..... St. Louis
Reynolds, Garland A. .... Cape Girardeau

changing practice in **immunization**

"Council-Accepted" Diphtheria and Tetanus Toxoids, Alum Precipitated, and Pertussis Vaccine Combined, with antigenic content of *H. pertussis* increased to 45,000 million organisms per immunizing treatment, affords you and your patient

1 Fewer Injections

2 Simultaneous Immunization

3 More Rapid Protection

4 Time Saved

5 Economy



The use of multiple antigens, particularly combinations of diphtheria and tetanus toxoids, alum precipitated, and pertussis vaccine, is part of the changing practice in immunization.

Recommended for infants and pre-school age children, immunization consists of three 0.5 cc. subcutaneous injections at intervals of from four to six weeks.

SUPPLIED:

Single Immunization package contains three ½ cc. Vials

Five Immunizations package contains three 2½ cc. Vials

DIPHTHERIA and TETANUS TOXOIDS, ALUM PRECIPITATED, and PERTUSSIS VACCINE COMBINED

THE NATIONAL DRUG COMPANY
Philadelphia 44, Pa.

PHARMACEUTICALS, BIOLOGICALS, BIOCHEMICALS
FOR THE MEDICAL PROFESSION

Reynolds, James R. ....Neosho
Reynolds, Stephen D. ....Plattsburg
Rhoads, Mark H. ....Brookfield
Rhodes, Euhlan L. ....Sedalia
Rice, Earl R. ....St. Louis
Rice, Grover C. ....Kansas City
Rich, George T. ....St. Louis
Richman, Elmer ....St. Louis
Richtarsic, Stephen R. ....St. Louis
Richter, William B. ....Stockton
Ridge, Frank I. ....Kansas City
Ries, Douglas A. ....Richmond Heights
Rigdon, Thomas J. ....Kennett
Rigney, Levi M. ....Springfield
Riley, Ralph D. ....St. Louis
Riley, William H. ....St. Louis
Riller, Lowell E. ....Independence
Ringo, Henry J. ....St. Louis
Rinkel, Herbert J. ....Kansas City
Riordan, Lawrence M. ....St. Louis
Rising, Jesse D. ....Kansas City
Ritchie, Frances R. ....St. Louis
Ritter, Raymond A. ....Cape Girardeau
Robb, Thomas P. ....Philomath, Ore.
Robbins, Martin V. ....Peculiar
Roberson, John H. ....Hayti
Roberts, Harold K. ....St. Louis
Roberts, Harold M. ....Kansas City
Roberts, John R. ....Brentwood
Roberts, Sam E. ....Kansas City
Robertson, Frank G. ....St. Louis
Robertson, J. Archie ....Kansas City
Robertson, LeRoy L. ....St. Louis
Robertson, Robert C. ....Dayton, Ohio
Robichaux, Eugene B. ..Excelsior Springs
Robichaux, Eugene C. ..Excelsior Springs
Robinson, Bradbury J. ....Farmington
Robinson, David Beach ....Kansas City
Robinson, David Weaver ....Kansas City
Robinson, Don ....Slater
Robinson, Edith C. ....St. Louis
Robinson, Edward E. ....Adrian
Robinson, Ernest Kip ....Kansas City
Robinson, George G. ....Humansville
Robinson, G. Wilse ....Kansas City
Robinson, G. Wilse, Jr. ....Kansas City
Robinson, John A. ....Edgerton
Robinson, Ralph D. ....Address Unknown
Roblee, Melvin A. ....St. Louis
Robnett, D. A. ....Columbia
Roche, Maurice B. ....St. Louis
Rodeman, John M. ....Sedalia
Roe, Allen N. ....St. Louis
Roebber, Harry M. ....Bonne Terre
Rogers, C. H. ....St. Louis
Rogers, John Asa ....University City
Rohlfing, Edwin H. ....St. Louis
Rohlfing, Walter H. ....St. Louis
Rolens, Louis E. ....Granby
Roller, Merrill J. ....Hannibal
Rollins, H. D. ....Winona
Rolwing, E. Charles ....Charleston
Romendick, Samuel S. ....St. Louis
Roper, Stanley D. ....Ozark
Rose, Charles W. ....Kansas City
Rose, Dalton K. ....St. Louis
Rose, Frank H. ....Albany
Rose, William F. ....Jefferson Barracks
Rosen, Charles S. ....St. Louis
Rosenbaum, Harry D. ....St. Louis
Rosenberg, Henry E. ....St. Louis
Rosenberg, Meyer B. ....St. Louis
Rosenberger, Charles F., University City
Rosenfeld, Henry ....St. Louis
Rosenfeld, Herman ....St. Louis
Rosenthal, Arthur D. ....St. Joseph
Rosenthal, Frances E. ....Joplin
Rosenthal, Irwin I. ....St. Joseph
Rosenthal, Leonard G. ....St. Louis
Rosenwald, Leon ....Kansas City
Ross, Pren J. ....Grant City
Rossen, Julius A. ....St. Louis
Rost, William B. ....St. Joseph
Roth, John J. ....St. Louis
Rothman, David ....St. Louis
Rothman, Paul M. ....St. Louis
Rotter, Julius C. ....St. Louis
Roufa, Joseph F. ....St. Louis
Roundy, Collis I. ....St. Joseph
Rouse, David M. ....LaBelle
Rowe, Alfred R. ....Poplar Bluff
Rowland, Willard D. ....New Orleans, La.
Rowlette, Avery P. ....Moberly
Roy, Gustave A. ....Anaheim, Calif.
Royse, Roy P. ....Sullivan
Royston, Grandison D. ....St. Louis
Rubnitz, Leon H. ....Kansas City
Ruddell, George W. ....St. Louis
Ruff, Troy E. ....Jackson
Ruhling, Rudolph ....St. Louis
Rund, Emmet H. ....St. Louis
Runde, F. William ....St. Louis
Rupe, Wayne A. ....St. Louis
Rusk, Earl McD. ....New Bloomfield
Rusk, Howard A. ....Scarsdale, N. Y.
Russell, James M. ....Monett
Russell, John J. ....Deepwater
Russell, Richard Lee ....Ashland
Russi, Simon ....Richmond, Va.
Rutledge, John F. ....Crystal City
Rutledge, Paul E. ....Webster Groves
Rutledge, William J. ....Campbell
Ryan, John B. ....Hermann
Ryan, John Harold ....St. Joseph
Ryan, John J. ....Clayton
Ryan, Linus M. ....St. Louis
Ryan, Robert A. ....Mountain Grove
Ryan, Robert E. ....St. Louis
Ryan, R. A., Jr. ....Fairfield, Ia.
Ryburn, John P. ....St. Louis
Ryland, Caius T. ....St. Louis

—S—

Sachar, Leo A. ....St. Louis
Sachs, Ernest ....St. Louis
Saferstein, Lester ....Kansas City
Saferstein, T. Harry ....St. Joseph
St. Clair, Robert L. ....Kansas City
St. John, Dewey ....St. Louis
St. John, Thomas C. ....St. Louis
Saladino, Anthony ....Kansas City
Sale, Llewellyn ....St. Louis
Sale, Llewellyn, Jr. ....St. Louis
Salisbury, William J. ....Vigus
Salter, John C. ....St. Louis
Salyer, Charles E. ....St. Joseph
Sample, George A. ....Chaffee
Samuelson, Edward A. ....Kansas City
Sanders, Clarence E. ....Kansas City
Sanders, Clifford E. ..Richmond Heights
Sanders, Robert D. ....St. Louis
Sanders, Theodore E. ....St. Louis
Sanders, William F. ....Kansas City
Sandperl, Harry ....St. Louis
Sanford, Joseph Hoy ....St. Louis
Sante, L. R. ....St. Louis
Sargent, Alden P. ....Sikeston
Sarno, S. M. ....Morehouse
Sartin, John M. ....Springfield
Saslow, George ....St. Louis
Sassin, Edmond F. ....St. Louis
Satterfield, Val B. ....Bremerton, Wash.
Sauer, F. J. Dean ....St. Louis
Sauer, William E. ....St. Louis
Saunders, Everett L. ....Independence
Sausville, Albert J. ....St. Louis
Saxton, John A., Jr. ....St. Louis
Saylor, Edward ....Phillipsburg
Scarpellino, Louis ....Kansas City
Schaaf, Katherine M. ....St. Louis
Schaefer, Charles L. ....Kansas City
Schaefer, Edward H. ....Sedalia
Schaerrer, Hans ....Kansas City
Schaerrer, William C. ....Kansas City
Schafer, Joseph C. ....St. Louis
Schattyn, John Martin ....St. Louis
Schauffler, Robert M. ....Kansas City
Schechter, Samuel E. ....Chicago, Ill.
Scheele, M. H. ....University City
Scheff, Harold ....St. Louis
Scherman, Victor E. ....St. Louis
Scherrer, Fred W. J. ....St. Louis
Schiffmacher, Jack E. ....Kansas City
Schlenker, Lawrence ....St. Louis
Schlossstein, Adolph G. ....St. Louis
Schluer, Elmer P. ....St. Louis
Schlueter, Newell W. ....St. Louis
Schlueter, Robert E. ....St. Louis
Schmidt, Charles A. ....Washington
Schmidt, Edward C. H. ....Kansas City
Schmidt, E. M. ....St. Louis
Schmidt, Herbert H. ....Washington
Schmidt, William C. ....Augusta
Schmidtke, Edwin C. ....St. Louis
Schmiemeier, Herman August ..St. Louis
Schmiemeier, Roy H. ....St. Louis
Schmitz, Edgar F. ....St. Louis
Schneider, Louis W. ...Address Unknown
Schneider, Sam ....St. Louis
Schneider, Vincent A. ....St. Charles
Schnoebelen, Paul C. ....St. Louis
Schoeberl, C. B. ....Joplin
Schoetker, George H. ....St. Louis
Schofield, Linn J. ....Warrensburg
Scholz, Roy P. ....St. Louis
Schooley, R. C. ....Odessa
Schopp, Alvin C. ....St. Louis
Schorer, Edwin H. ....Kansas City
Schrepel, Herbert O. ....St. Louis
Schroeder, Sidney O. ....Liberty
Schuchat, W. Louis ....St. Louis
Schuck, Philip ....St. Louis
Schuhmacher, N. R. ..San Marino, Calif.
Schulein, Vernon E. ....St. Louis
Schulte, G. A. ....Joplin
Schultz, Samuel ....St. Louis
Schulz, A. P. E. ....St. Charles
Schulz, Gustav B. ....Cape Girardeau
Schumacher, Cyril W. ....St. Louis
Schutz, Carl Bryant ....Kansas City
Schutz, Richard B. ....Kansas City
Schwartz, Alfred S. ....St. Louis
Schwartz, Eugene J. ....Springfield
Schwartz, Frederick O. ....St. Louis
Schwartz, Henry G. ....St. Louis
Schwartzman, Bernard ....St. Louis
Schwartzmann, John R. ....St. Louis
Schweitzer, Fred C., Jr. ....Springfield
Sciortino, Gaspere ....St. Louis
Sciortino, John S. ....St. Louis
Scobee, Richard G. ....St. Louis
Scopelite, Joseph A. ....St. Louis
Scorse, Sidney W. ....Joplin
Scott, Clive D. ....Louisiana
Scott, Elijah A. ....St. James
Scott, Elwin P. ....St. Louis
Scott, Henry F. ....Address Unknown
Scott, J. U. ....Harrisonville
Scott, Wendell, G. ....St. Louis
Seabaugh, Dayton I. L. ....Jackson
Seabaugh, D. Rusby ....Jackson
Seabaugh, Oda L. ....Cape Girardeau
Seabaugh, Ottis D. ....Webster Groves
Seddon, John W. ....St. Louis
Seelig, Major G. ....Atherton, Calif.
Seely, Clark W. ....Kansas City
Seib, George A. ....St. Louis
Sellars, C. J. ....Mt. Moriah
Selle, Harold C. ....St. Louis
Senn, Emmett J. ....Herculaneum
Senne, Herbert C. ....St. Joseph
Senor, Samuel D. ....St. Joseph
Senor, Samuel Earl ....St. Joseph
Senseney, Eugene T. ....St. Louis
Senturia, Ben H. ....St. Louis
Senturia, Hyman R. ....St. Louis
Sertl, John D. ....St. Louis
Settle, Charles T. ....Rock Port
Settle, Emmett B. ....Rock Port
Sevin, Omar R. ....St. Louis
Sewell, Minor F. ....Kansas City
Sewell, W. S. ....Springfield
Sewing, Arthur H. ....St. Louis
Sexauer, Arthur E. ....Ste. Genevieve
Sexton, Daniel L. ....St. Louis
Sexton, Elmer E. ....St. Louis
Shackelford, Horace H. ....St. Louis
Shahan, Philip T. ....St. Louis
Shahan, William E. ....St. Louis
Shaner, John F. ....St. Louis
Shanklin, Benjamin ....St. Louis
Shapiro, Lazare Melvin ....Kansas City
Sharp, Cecil A. Z. ....Clayton
Sharp, William L. ....St. Louis
Shaver, Nellie A. ....St. Louis
Shaw, William J. ....Fayette
Sheedy, John A. ....Battle Creek, Mich.
Sheets, John S. ....St. Louis
Sheets, Martin E. ....St. Louis
Shelby, Mitchell H. ....Cape Girardeau
Sheldon, John G. ....Kansas City
Sheldon, John, Jr. ....Kansas City
Shelton, Edward Olney ....Eldon
Shelton, Harold J. ....St. Louis
Shephard, H. C. ....Flat River
Shepherd, Charles T. ....Clayton
Sheridan, Edmund R. ....St. Louis
Sherman, C. A. ....Kansas City
Sherwin, Charles F. ....St. Louis
Sherwin, Charles S. ....St. Louis
Sherwood, Loraine ....Kansas City
Shirey, Arnold G. ....Hayti
Shofstall, Charles K. ....Kansas City
Shores, Earl M. ....St. Joseph
Shouse, Edwin ....Lawson
Shrader, E. Lee ....St. Louis
Shreffler, Algie R. ....St. Louis
Shuey, Herbert H. ....Kansas City
Shull, George Donald ....Jefferson City
Shumate, D. L. ....Kansas City
Shumate, L. St. Clair ....Reeds Spring
Shutt, Cleveland H. ....St. Louis
Shy, James C. ....St. Louis
Shy, Milton P. ....Sedalia
Shypper, Moses J. ....Kansas City
Siceluff, Joseph G. ....Springfield
Siddall, H. Stewart ....Alton, Ill.
Siebert, Walter Joseph ....St. Louis
Sievers, Edward Faville ....St. Louis
Signorelli, Andrew J. ....St. Louis
Silsby, Don H. ....Springfield
Silsby, Don James ....Springfield
Silsby, Harry D. ....Springfield
Silverberg, Charles ....St. Louis
Simmons, B. B. ....St. Joseph
Simmons, Leroy ....Address Unknown
Simmons, Sterling P. ....Marshall
Simon, Jerome I. ....St. Louis

Simon, Selig .....St. Louis
Simpson, Eber .....St. Louis
Simpson, Emerson L. .....Springfield
Simpson, Guy L. .....Clayton
Simpson, Lloyd .....Columbia
Simpson, Morris B. .....Kansas City
Simpson, Robert H. .....Columbia
Simpson, Samuel E. .....Stanberry
Sims, John L. .....Joplin
Sinclair, Alexander B. .....Kansas City
Singleton, J. Milton.....Kansas City
Sinner, Bernard L. .....St. Louis
Skeffington, Mary Jane.....St. Louis
Skilling, David M., Jr. .....St. Louis
Skinner, Edward H. .....Kansas City
Skinner, John Osman .....Kansas City
Skinner, John Spalding .....Clayton
Skinner, John T. .....Kansas City
Skoog, Andrew L. .....Kansas City
Slaughter, Shelby C. .....Fredericktown
Slusher, Ernest W. .....Kansas City
Small, Walter L. .....Kansas City
Smit, Herbert M. .....St. Louis
Smit, William M. .....St. Louis
Smith, Andrew J. .....St. Joseph
Smith, Arthur B. .....Kansas City
Smith, Benjamin F., Jr. .....St. Louis
Smith, C. Souter .....Springfield
Smith, Carl C. .....Moberly
Smith, Clifton .....St. Joseph
Smith, Clinton K. .....Kansas City
Smith, Dudley .....St. Louis
Smith, Edward S. .....Kirksville
Smith, Frank J. .....St. Louis
Smith, George P. .....St. Louis
Smith, Herbert P. .....St. Louis
Smith, Hugh R. .....St. Louis
Smith, J. Earl .....St. Louis
Smith, James D. .....Kansas City
Smith, J. E. .....Rolla
Smith, James M. .....St. Louis
Smith, James O. .....Clinton
Smith, John R. .....St. Louis
Smith, Louis J. .....New Madrid
Smith, Milton .....St. Louis
Smith, Oda Oscar .....St. Louis
Smith, Reuben M. .....St. Louis
Smith, Robert M. .....St. Louis
Smith, Robert W. .....Kansas City
Smith, Rollin H. .....West Plains
Smith, Stephen D. .....Columbia
Smith, Ulysses S. .....Hannibal
Smith, Wallis .....Springfield
Smith, Warren F. .....St. Louis
Smith, William Alexander.....
.....Webster Groves
Smith, William Jewell .....Hannibal
Smith, William Russell.....Carthage
Smolik, Edmund A. .....St. Louis
Snavely, Edmund C. .....Sedalia
Snider, Samuel Harrison....Kansas City
Snyder, Edward N. .....St. Louis
Snyderman, Henry...Leavenworth, Kan.
Soderberg, N. B. .....Cleveland, Ohio
Sommer, Conrad S. .....St. Louis
Soper, Horace W. .....St. Louis
Sophian, Abraham.....Kansas City
Sosaki, George R. .....St. Charles
Soule, Samuel D. .....St. Louis
Spafford, Allen Leo.....Kansas City
Spain, Kate C. .....St. Louis
Spalding, Wilber B. .....Plattsburg
Sparhawk, William J. ...Cape Girardeau
Spaulding, William.....Poplar Bluff
Spears, Charles A. .....Billings
Speidel, F. W. .....Senath
Speidel, Roy E. .....Senath
Spell, Frank R. .....Liberal
Spelman, A. E. .....Smithville
Spence, Elbert L. .....Kennett
Spencer, Floyd H. .....St. Joseph
Spencer, Selden.....St. Louis
Spinzig, Edgar W. .....Kirkwood
Spitz, Milton A. .....St. Louis
Spivy, Raymond M. .....St. Louis
Spoeneman, Marlin C. .....St. Louis
Spoenemann, Walter H. .....St. Louis
Sprong, Aaron A. .....Excelsior Springs
Stacy, Emmett W. .....Princeton
Stacy, Winton T. .....Fort Sill, Okla.
Staehle, Melvin E. .....St. Louis
Staggs, William A. .....Kansas City
Stahl, Fred A. .....Springfield
Stahl, Phineas D. .....St. Louis
Staley, Harry R. .....Kansas City
Stamey, James T. .....St. Joseph
Stanbro, William.....Washington, D. C.
Stanze, Frank J. .....St. Louis
Stapp, Roth Van Allen.....Kansas City
Starkloff, Gene B. .....St. Louis
Starkloff, Max.....St. Louis
Starks, John C. .....Gower
Statland, Harry.....Kansas City
Staton, R. Hamilton.....Carrollton
Stauffacher, C. Gordon.....Sedalia
Stauffer, Harry B. .....Jefferson City
Stecker, George.....St. Louis
Steele, Harol.....St. Louis
Steffen, Lawrence F. .....Kansas City
Stein, Arthur W. .....St. Louis
Stein, Harry J. .....St. Louis
Stein, Leon A. .....St. Louis
Steinberg, Franz U. .....St. Louis
Steiner, Albert S. .....St. Louis
Steiner, Alexander J. .....St. Louis
Stephan, August P. .....Jefferson City
Stephens, LeRoy J. .....St. Louis
Stephens, William A. .....St. Louis
Stephenson, K. L. .....New Orleans, La.
Sterling, C. E. .....St. Louis
Sterling, John A. .....Maplewood
Stern, Franz .....St. Louis
Stevens, Robert W. .....St. Louis
Stewart, Floyd.....St. Louis
Stewart, Francis H. .....St. Louis
Stewart, J. W. .....St. Louis
Stewart, James.....Jefferson City
Stewart, John H. .....Kansas City
Stewart, R. Wendell.....Springfield
Stewart, William James.....Columbia
Stickler, Ralph O. .....Kirksville
Stindel, Charles Ernst.....St. Louis
Stine, Dan G. .....Columbia
Stocking, Lyman C. .....St. Louis
Stockwell, A. Lloyd.....Kansas City
Stoelzle, Joseph D. .....Kirkwood
Stokes, James Bell.....Excello
Stolar, Jacob.....St. Louis
Stone, Charles A. .....St. Louis
Stone, Edna M. .....St. Louis
Stone, Murray C. .....Springfield
Stone, William E. .....Boonville
Stormont, Riley M. .....Webb City
Stranz, Roman J. .....St. Louis
Straucher, Gilbert W. ...Webster Groves
Strauss, Arthur E. .....St. Louis
Streetor, Roderick D. .....Moberly
Strehlman, Benjamin G. .....Union
Stricker, Emil A. .....St. James
Striegel, B. F. .....St. Louis
Stroud, C. Malone.....St. Louis
Strub, Giles J. .....New York, N. Y.
Stryker, Garold V. .....St. Louis
Stuart, Byron M. .....Boonville
Stuart, Daniel D. .....Brunswick
Stubbs, James B. .....Richmond Heights
Stude, William Carl.....St. Louis
Stuebner, Roland W. .....Clayton
Sturhahn, Ferdinand O. ..Webster Groves
Stutsman, Albert C. .....St. Louis
Sugarbaker, Everett D. ....Jefferson City
Suggett, Finis C. .....Columbia
Sullivan, B. Hazard.....Miami
Sullivan, Clement J. .....University City
Sullivan, William J. ....Philadelphia, Pa.
Sultzman, Francis E. .....Hannibal
Sum, Othmar J. .....Barnhart
Summers, Caldwell B. .....Kansas City
Summers, Jacob H. .....Lebanon
Summers, Joseph S. .....Jefferson City
Summers, Joseph S., Jr. ..St. Paul, Minn.
Sunderman, Raymond C. .....St. Louis
Susanka, William Dee.....St. Louis
Sutter, Richard A. .....St. Louis
Sutton, Charles E. .....Bonne Terre
Sutton, Richard L., Jr. .....Kansas City
Sutton, Richard L. .....McAllen, Tex.
Sweany, R. B. T.....Sedalia
Sweet, Herbert C. .....Afton
Sweetman, Homer A. ..Guerneville, Calif.
Swekosky, Frank J. .....St. Louis
Swenson, Alvin L. .....Kansas City
Swisher, Robert C. ....Address Unknown
Switzer, D. Clyde.....Grandview
Szewzyk, Thaddeus.....St. Louis

—T—

Tadlock, Baxter W. .....St. Joseph
Tahir, Mohammad.....St. Joseph
Tainter, Frank J. .....St. Louis
Talbott, Hudson.....St. Louis
Talty, Matthew H. .....Houston, Tex.
Tapper, Stephen M. .....St. Louis
Tarrasch, E. L. .....Springfield
Tarson, Solomon S. .....Kansas City
Tarver, Quinton .....Kennett
Tashma, Sigmund.....St. Louis
Tasker, Charles B. .....Kansas City
Tate, Lloyd L. .....St. Louis
Tate, Prentiss S. .....Fulton
Taussig, Barrett L. .....St. Louis
Taussig, Joseph B. .....St. Louis
Taylor, Edward L. .....Steele
Taylor, Herbert I. .....Jefferson City
Taylor, Leo T. .....Neosho
Taylor, Leon A. .....Jefferson City
Taylor, Van W. .....Bonne Terre
Taylor, William E. .....Springfield
Teachenor, Frank R. .....Kansas City
Teall, Raymond E. .....Kansas City
Teiber, Frederick W. .....St. Louis
Teneglia, Eutimio D. .....St. Louis
Tess, Melvin.....St. Louis
Tesson, James Albert.....Kansas City
Thale, Thomas.....St. Louis
Thatcher, J. O. M. .....Ferguson
Thiele, George H. .....Kansas City
Thieme, Harry L. .....St. Louis
Thierry, Charles W. .....St. Louis
Thiessen, Edward Herman...Kansas City
Thimsen, Udell S. ....Address Unknown
Thomas, A. W. .....Springfield
Thomas, Peter.....St. Louis
Thomas, Charles S. .....St. Louis
Thomason, Henry E. .....Kansas City
Thompson, Arthur M. .....St. Louis
Thompson, Emma A. B. ...Breckenridge
Thompson, F. G. .....St. Joseph
Thompson, F. G., Jr. .....St. Joseph
Thompson, J. William .....St. Louis
Thompson, Lawrence D. .....St. Louis
Thompson, Nathan P. .....St. Louis
Thompson, Ralph L. .....St. Louis
Thompson, William G. .....Holden
Thomson, David A. .....St. Louis
Thorn, Druery R. .....Kansas City
Thornburgh, Albert H. .....West Plains
Threadgill, Jesse M. .....Forsyth
Throgmorton, Roward B. .....Sikeston
Thurlow, Ralph M. ....Address Unknown
Thurman, Joseph L. .....Potosi
Thurston, Don L. .....St. Louis
Thym, Henry P. .....St. Louis
Thym, Herman H. .....Kansas City
Tibe, Matilda L. .....St. Louis
Tichenor, Robert W. .....Sappington
Tiernon, Luke B. .....St. Louis
Tillman, Walter Wm., Jr. .....Bolivar
Timerman, Arthur R. .....St. Joseph
Tincher, Joseph C. .....Boonville
Titsworth, Guy.....Sedalia
Titterington, Paul F. .....St. Louis
Tjoflat, Oliver Eugene.....St. Louis
Tobias, Norman .....Clayton
Todd, D. Clay.....St. Louis
Todd, Thomas B. .....Nevada
Tomlinson, William Loren.....St. Louis
Tonelli, George L. .....St. Louis
Tooker, Charles W. .....St. Louis
Toothaker, Wayne M. .....St. Joseph
Torin, Bernice Albert.....St. Louis
Touhill, Neal J. .....Dexter
Towers, Orville W. .....St. Charles
Townsend, James A. .....Eureka
Townsend, Vincent F. .....Maplewood
Townsend, William H. .....Maplewood
Townshend, Grafton D. .....Kansas City
Tracy, Herbert A. .....Belton
Tracy, James C. .....Mound City
Trader, Charles B. .....Sedalia
Traubitz, Arnold .....Leadwood
Treadway, W. W. .....Silex
Treharne, Frank E. .....Independence
Treiman, Robert C. .....St. Louis
Tremain, E. E. .....Maplewood
Tremain, Irl G. .....St. Louis
Trigg, Joseph F. .....St. Louis
Trimble, William K. .....Kansas City
Triplett, Jacob S. .....Harrisonville
Tripodi, Anthony M. .....Tacoma, Wash.
Trippe, Harrison C. .....Kansas City
Trolinger, J. H. .....Jackson
Trowbridge, B. C. .....Kansas City
Trowbridge, Ellsworth Haydn, Kansas City
Trowbridge, Ellsworth H., Jr., Kansas City
Tureen, Louis Leon.....St. Louis
Turner, Glenn O. .....Springfield
Turner, Rush.....St. Louis
Tuthill, Herbert.....Kansas City
Tuthill, Sanford W. .....Alexandria, La.
Tuttle, Floyd Wilkins.....Blue Springs
Tversky, Edgar L. ....Address Unknown
Twedell, Donald Louis.....St. Louis
Twyman, Elmer D. ....San Marino, Calif.
Twyman, Richard A. .....Kansas City
Tygett, G. J. .....Cape Girardeau
Tyzzer, Robert N. .....San Diego, Calif.

—U—

Uhlemeyer, Henry A. .....St. Louis
Uhlemeyer, Henry A., Jr. .....St. Louis
Uhlmann, Robert.....Kansas City
Uhrich, Gerard I. .....St. Louis
Underwood, Dick Holland....Kansas City
Underwood, John B. .....St. James
Underwood, Johnson, Jr. .....
.....North Kansas City

Underwood, Johnson .....Parkville
Underwood, Millard K. .....Rolla
Underwood, Ross H. .....Kansas City
Unger, Harold.....Kansas City
Unterberg, Hillel.....St. Louis
Upshaw, Paul O. .....Springfield
Upsher, Albert E. .....Kansas City
Urban, Edgar Dale.....Sikeston
Urban, Emanuel T. .....St. Louis

—V—

Vail, A. Denton.....Springfield
Valentine, Herbert S. .....Kansas City
VanBiber, James T. .....Kansas City
Van Cleve, John D. ..Corpus Christi, Tex.
Vandel, Dwight T. .....Kansas City
Vandiver, Virgil D. .....Chillicothe
Vandover, John T. .....St. Louis
VanNoy, Levi T. .....Norwood
Vanorden, Herbert F. .....Kansas City
Van Ravenswaay, Arie C. H. ..Boonville
Van Urk, Jules B. .....Carthage
Van Vranken, Eugene E. .....St. Louis
Varian, Thelma S. .....Columbia
Vatterott, Paul B. .....Overland
Vaughan, John R. .....St. Louis
Vaughan, J. Russell.....St. Louis
Veatch, Charles A. .....Marshall
Veeder, Borden S. .....St. Louis
Verda, Dominic J. .....St. Louis
Vezeau, Stephen.....St. Louis
Viley, Leland P. .....Kansas City
Vinyard, Robert .....Springfield
Virant, John A. .....Clayton
Virden, C. Edgar.....Kansas City
Vitale, Nicholas S. .....St. Louis
Vitt, Alvin E. .....St. Louis
Vitt, Edwin F. .....St. Louis
Vitt, Rudolph S. .....St. Louis
Vivona, Stefano.....St. Louis
Vizgird, J. J. .....St. Louis
Voegelin, Samuel.....Kansas City
Vogel, Eugene A. .....St. Louis
Vogler, Alfred T. .....St. Louis
Vogt, William H., Jr. .....St. Louis
Vohs, Carl F. .....St. Louis
Vollmar, Clarence J. ....Webster Groves
Von Kaenel, Joseph E. .....St. Louis
Votaw, Robert E. .....Clayton
Vournas, Christopher G. .....St. Louis

—W—

Wachenfeld, Carl H. .....Webster Groves
Wachowiak, Marion .....Palmyra
Wachter, Harry E. .....St. Louis
Wade, Frederick E. .....Kansas City
Wade, James H. .....Ozark
Wade, James Paul.....St. Louis
Wadlow, Ernst E. .....St. Joseph
Wagenbach, William F. .....St. Louis
Wakefield, Franklin, Jr. .....Kansas City
Wakeman, Jasper N. .....Springfield
Walker, George S. .....Clinton
Walker, Grant D. .....Eldon
Walker, James C. .....Kansas City
Walker, John W. .....Kansas City
Walker, L. L. .....St. Louis
Walker, Paul W. .....Joplin
Walker, William E. .....LaMonte
Wall, Albert.....St. Louis
Wall, Arthur H. .....Sierra Madre, Calif.
Wall, Harry C. .....Kansas City
Wall, Harvey M. .....Windsor
Wallace, Edgar S. .....Potosi
Wallace, Edwin S. .....Washington, D. C.
Wallace, Frank Barnett.....Kansas City
Wallace, Leo F. .....Maryville
Walsh, William T. ....Kingwood, W. Va.
Walter, Archie L. .....Sedalia
Walters, William H. .....St. Louis
Walthall, Damon O. .....Kansas City
Walther, Roy A. .....Overland
Walther, Roy A., Jr. .....Overland
Walton, Franklin E. .....St. Louis
Walton, Josiah H. .....St. Louis
Ward, Joe .....Lexington
Warner, Robert G. .....St. Louis
Washburn, J. Loren.....Versailles
Wasserman, Helman C. .....St. Louis
Wasson, Wesley B. .....Nixa
Waterman, F. M. .....Liberty
Waters, E. B. .....Kirkwood
Watkins, George L. .....Farmington
Watkins, George L., Jr. .....Farmington
Watson, B. Frank.....Kansas City
Watson, Ethel .....Independence
Wattenberg, Carl A. .....St. Louis
Watts, Robert B. .....Wellington
Waugh, Clifton M. .....Tarkio
Wayland, Thomas A. .....St. Louis
Weaver, John S. .....Kansas City
Webb, J. W., Jr. .....North Kansas City
Webb, Leslie R. .....Springfield
Webb, Lewis M. .....St. Louis
Webb, Marion A. .....St. Louis
Webb, Paul Kingsley.....St. Louis
Weber, Eugene P. .....St. Louis
Weber, Sol .....St. Louis
Weber, William K. .....St. Louis
Webster, Joseph G. .....Kansas City
Webster, Roger W. .....Carthage
Wedig, John H., Jr. .....Alton, Ill.
Wegner, Carl R. .....St. Louis
Weiler, Thomas J. .....Glendale
Weinel, Francis G. .....St. Louis
Weinsberg, Charles H. .....St. Louis
Weinsberg, William C. .....St. Louis
Weintraub, Solomon A. .....St. Louis
Weir, Don C. .....Arnold
Weir, Edward F. .....Meadville
Weir, Royal A .....St. Louis
Weis, Matthew W. .....St. Louis
Weisman, Sol .....St. Louis
Weiss, Richard S. .....St. Louis
Weiss, William.....St. Louis
Weiterer, Herman L. .....St. Louis
Weitman, Maximilian.....St. Louis
Welborn, William S. .....St. Louis
Welch, Hooper W. .....St. Louis
Welker, Joseph E. .....Kansas City
Well, J. W. .....Palmyra
Welsh, Laurence C. .....St. Louis
Weltmer, Roger P. .....Kansas City
Wennerman, Sam F. .....St. Louis
Wentzel, Louis R. .....St. Louis
Wenzel, Peter S. .....St. Louis
Wepprich, Michael S. .....Washington
Werner, August A. .....St. Louis
Werner, Charles H. .....St. Joseph
Werner, William A. .....St. Louis
Werth, Duncan Scott.....Kirkwood
Wescoat, William H. .....Cape Girardeau
Wessling, Alfred L. .....Kansas City
West, William D. .....Mendon
West, William M. .....Monett
Westerman, Henry C. .....St. Louis
Westlake, Samuel B. .....St. Louis
Weston, Ursa C. .....Galt
Westphaelinger, Henry F. .....St. Louis
Westrup, Arthur W. ....Webster Groves
Westrup, Ellsworth A. ....Webster Groves
Weyerich, Leon F. .....St. Louis
Wheeler, John H. .....Kansas City
Wheeler, William M. .....Sedalia
Whitaker, George W. .....East Prairie
Whitaker, Topsy T. H. .....East Prairie
White, Charles A. .....St. Louis
White, Charles H. .....Kansas City
White, Edwin C. .....Kansas City
White, George A. .....Kansas City
White, Homer E. .....Naylor
White, Orville O. .....St. Louis
White, Park J. .....St. Louis
White, R. Ned.....Springfield
White, Stoughton F. ....New York, N. Y.
White, T. Wistar.....St. Louis
White, William H. .....St. Louis
White, W. H., Jr. .....St. Louis
Whitehead, Frank F. .....Neosho
Whiteman, John R. .....Kansas City
Whitener, Paul Rowland.....Overland
Whitman, Doyle C. .....Kansas City
Whitsell, John C. .....St. Joseph
Whitsell, Ora Earl.....St. Joseph
Whitten, Marion F. .....Carthage
Wiatt, William S. .....St. Louis
Wiegand, Herbert C. .....Clayton
Wien, Irving A. .....Kansas City
Wiener, Meyer .....Coronado, Calif.
Wiese, Harry W. .....St. Louis
Wilbur, Clifford H. .....Polo
Wilbur, Herbert L. .....Joplin
Wilbur, Ronald E. .....Cameron
Wilcox, Claude V. .....St. Louis
Wilcoxen, William B. ....Bowling Green
Wild, Aloysius A. .....St. Louis
Wilhelmi, Otto J. .....St. Louis
Wilkinson, Everett A. .....Kansas City
Will, Leo Archibald.....St. Louis
Willhelmy, Ellis W. .....Kansas City
Williams, Bill H. .....Joplin
Williams, Charles S. .....Malden
Williams, Delon A. .....Kansas City
Williams, John Wood, Jr. ..Jefferson City
Williams, John W. .....Springfield
Williams, Ray D. .....St. Louis
Williams, R. S. .....Mexico
Williams, Robert A. .....Kansas City
Williams, Robert F. .....Springfield
Williams, Vincent T. .....Kansas City
Williamson, O. E. .....St. Louis
Williamson, Walter E. .....St. Louis
Williamson, William H. .....Mokane
Williamson, William P. .....Kansas City
Willis, John Buren.....Mayview
Willits, Lyle G. .....Kansas City
Willoughby, Jean B. .....Sayre, Pa.
Wills, Will J. .....Springfield
Wilson, Charles F. .....Cape Girardeau
Wilson, Clifford C. .....Kansas City
Wilson, Fernando I. .....Kansas City
Wilson, Fred K. .....Winston
Wilson, Hester J. .....Kansas City
Wilson, Keith S. .....St. Louis
Wilson, Kenneth O. .....Kirkwood
Wilson, L. C. .....Kennett
Wilson, Robert P. C. .....Platte City
Wilson, Virgil R. .....Rosendale
Wilucki, Leo E. .....St. Louis
Wilucki, Melvin R. .....St. Louis
Wimber, Thomas C. .....St. Louis
Wimp, J. J. .....Kirksville
Winkelman, Esther B. .....Kansas City
Winkler, John J. .....Kansas City
Winn, George W. .....Boonville
Winn, James W. .....Higbee
Winningham, William H. .....Trenton
Winston, Bernard H. .....Kansas City
Winterer, Roland A. .....Afton
Wippo, Edgar W. .....St. Louis
Wisser, John J. .....St. Joseph
Wissner, Seth.....St. Louis
Withers, Orval R. .....Kansas City
Wittwer, Hugh J. .....St. Louis
Woeger, Jacob G. .....Whiteside
Wolf, Jack W. .....Kansas City
Wolff, Charles.....St. Louis
Wolfzen, Samuel W. .....Urich
Womack, James R. .....Houston
Womack, Nathan A. .....St. Louis
Wommack, Fred L. .....Crane
Wood, Bennett R. .....St. Louis
Wood, George F. .....Fulton
Wood, George H. .....Carthage
Wood, Harold.....St. Louis
Wood, Laurence E. .....Kansas City
Wood, V. V. .....St. Louis
Wood, William G. .....St. Louis
Wood, W. Logan.....Bolckow
Woodfin, Lyle L. .....Rafael, Calif.
Woodruff, Frederick E. .....St. Louis
Woods, Harold V. .....Independence
Wooldridge, A. Graham.....Butler
Woolsey, Robert D. .....St. Louis
Wortley, Cabray.....St. Joseph
Wortmann, Robert F. .....Kansas City
Wotawa, William J. .....St. Louis
Wray Rolla B. .....Nevada
Wright, Gordon D. .....St. Joseph
Wright, R. Paul.....Kansas City
Wrinkle, Thomas D. .....Halfway
Wuestenfeld, Herman E. ..Jerseyville, Ill.
Wulff, George J. L., Jr. ..University City
Wurzer, Arnold Henry.....St. Louis
Wyatt, Lois C. .....Kirkwood

—Y—

Yancey, Daniel L. .....Springfield
Yanow, Mitchell.....St. Louis
Yazel, Herman E. .....Kansas City
Yeargain, John Patterson.....Irondale
York, William B. .....Sarcoxie
Yoskit, Harry .....Festus
Yost, Walter B. .....University City
Young, Jesse W. .....Kansas City, Kan.
Young, John H. .....Crane
Young, John S. .....St. Louis
Young, Leo P. .....St. Louis
Young, Lillian V. .....Clayton
Young, Robert H. .....Moberly
Younger, Jesse.....Long Island, N. Y.
Youngman, George A. .....St. Louis
Yount, William E. .....Cape Girardeau

—Z—

Zahorsky, John .....Steelville
Zahorsky, Theodore S. .....St. Louis
Zahtz, Hyman.....St. Louis
Zeinert, Oliver B. .....St. Louis
Zeitler, Walter A. .....Jennings
Zeitler, William T. .....St. Louis
Zellermayer, Jacob.....Kansas City
Zentay, Paul J. .....St. Louis
Ziegelmeyer, John S. .....St. Louis
Ziegler, Allen M. .....Kansas City
Ziegler, Newell Richard.....Columbia
Ziegler, William Henry.....Boonville
Zillgitt, George H. .....St. Louis
Zillman, August W. .....Keytesville
Zimmermann, Carl A. W., Cape Girardeau
Zingale, Frank G. .....St. Louis
Zink, Oscar C. .....St. Louis
Zoglin, Nathan M. .....Kansas City
Zuber, Harold V. .....Kansas City
Zwart, Claude H. .....St. Louis

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Of the so-called minor complaints of pregnancy, a contributor to the medical literature* makes the following statement concerning backache —

"Backache seemed to be due to several causes. Strain of the lumbar muscles and the vertebral ligaments, due to a change in the center of gravity was often responsible; fallen arches aggravated the complaint. It was relieved by rest in bed. A maternity corset with moderately rigid stays in the back was of benefit . . . Sacro-iliac relaxation as evidenced by pain over the joint was usually unilateral and was referred along the sciatic nerve. Usually a maternity corset would relieve it. This corset should have a strap or other device that will pull it snug over the sacro-iliac region."

Charles J. Marshall, New York Journal of Medicine, Vol. 34, Aug. 15, 1934

Camp prenatal supports are unique in that the overstrap with its buckle (through which the lacings ply) allows the support to be drawn evenly and firmly about the pelvis; thus the pelvic joints are protected and steadied.

From such a foundation, the back of the patient is well supported and the abdominal muscles are aided in holding the increasing load in position.

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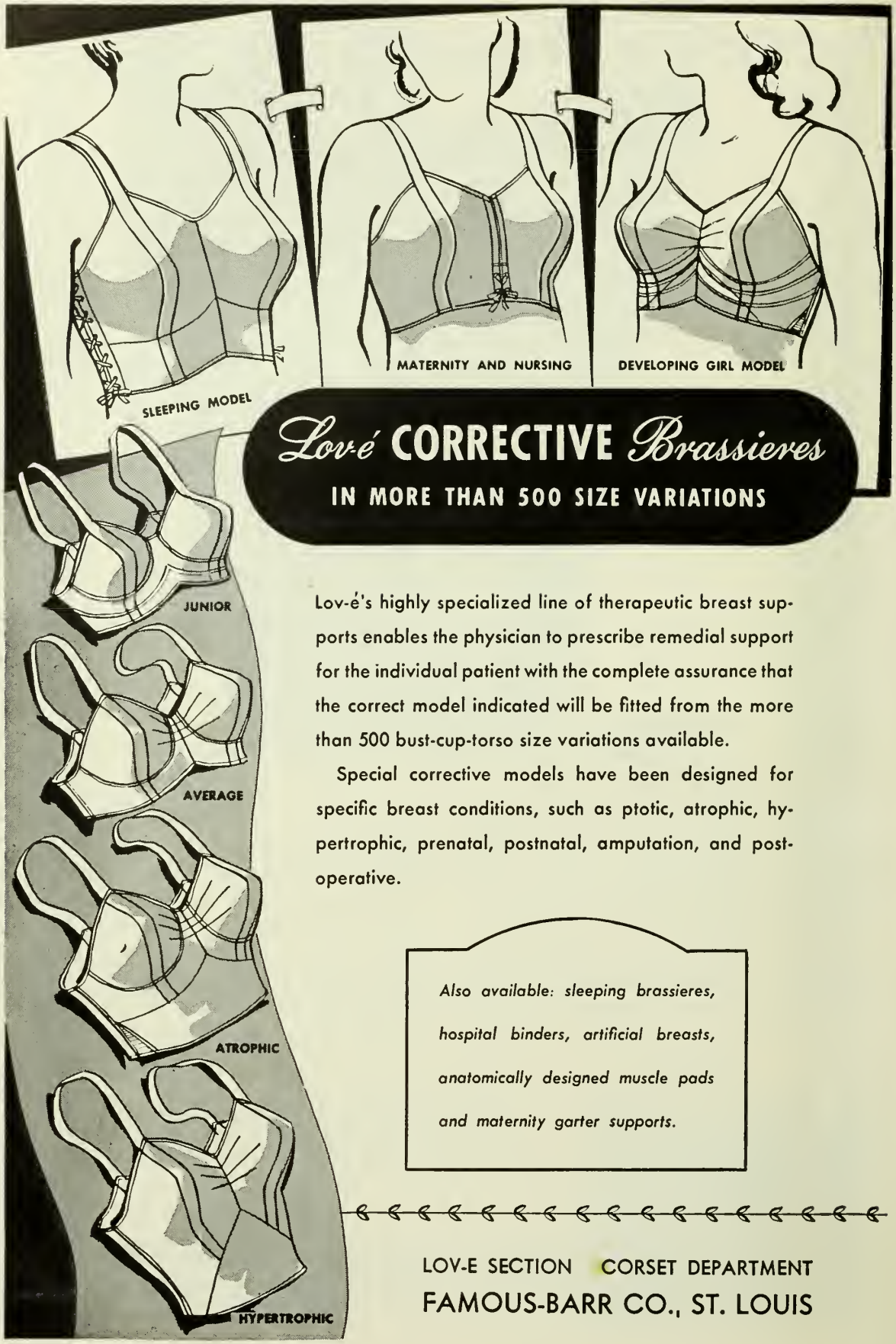
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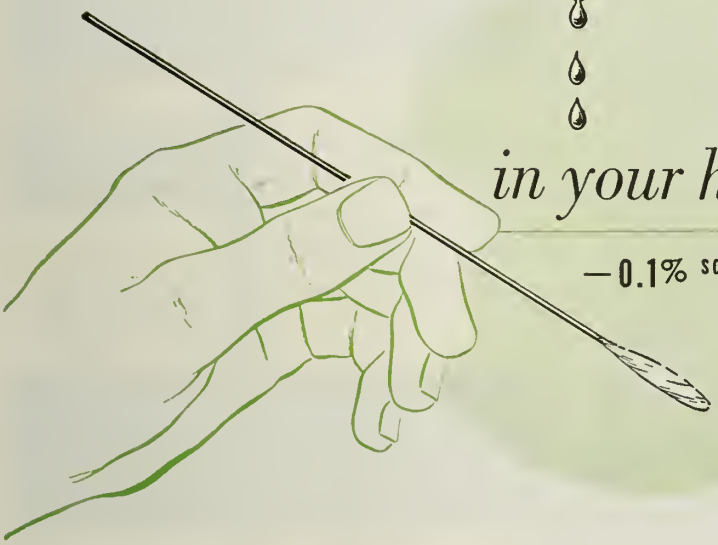
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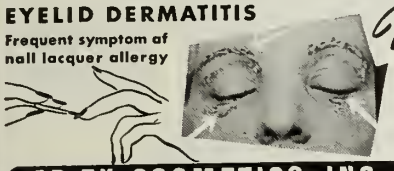
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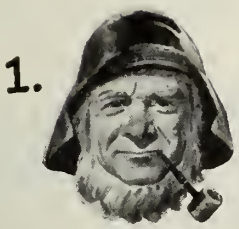
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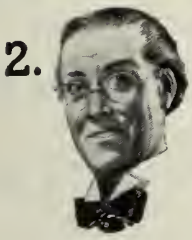
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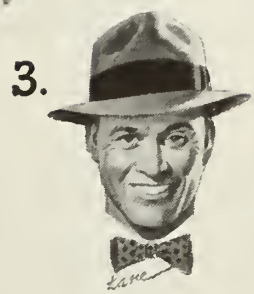












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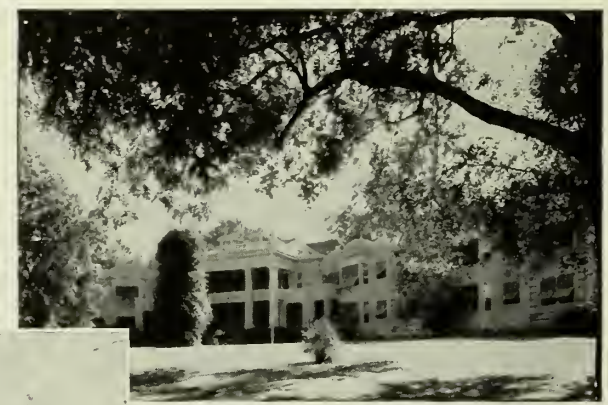
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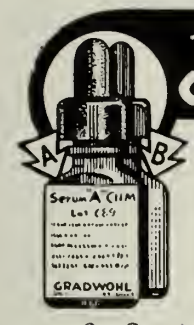
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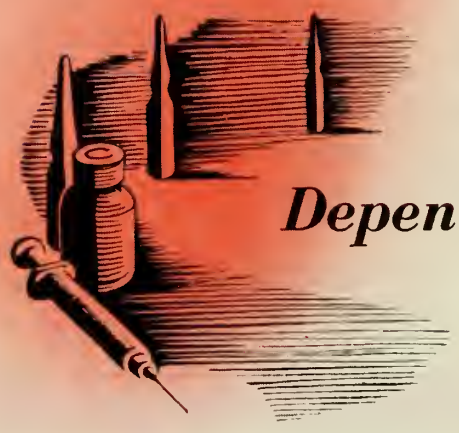
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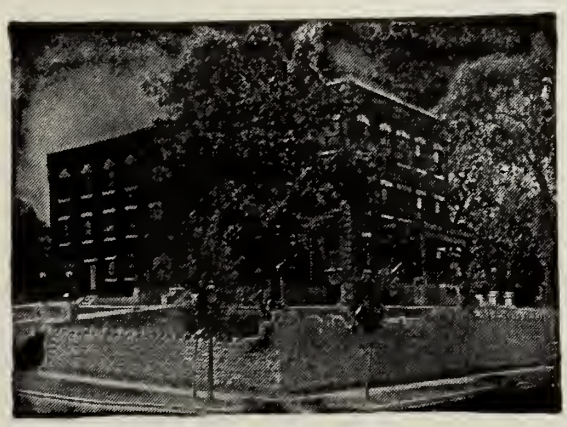
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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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1. Arbesman, C.E., et al., Jl. of Allergy 17:275, Sept. 1946
2. Feinberg, S.M., and Friedlaender, S., Am. Jl. Med. Sci. 213:58, Jan. 1947.
3. Fuchs, A.M., et al., Jl. of Allergy 18:385, Nov. 1947.

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*Snyder, M. L., Kiehn, C. L. & Christopherson, J. W., Mil. Surg. 97:380, 1945.

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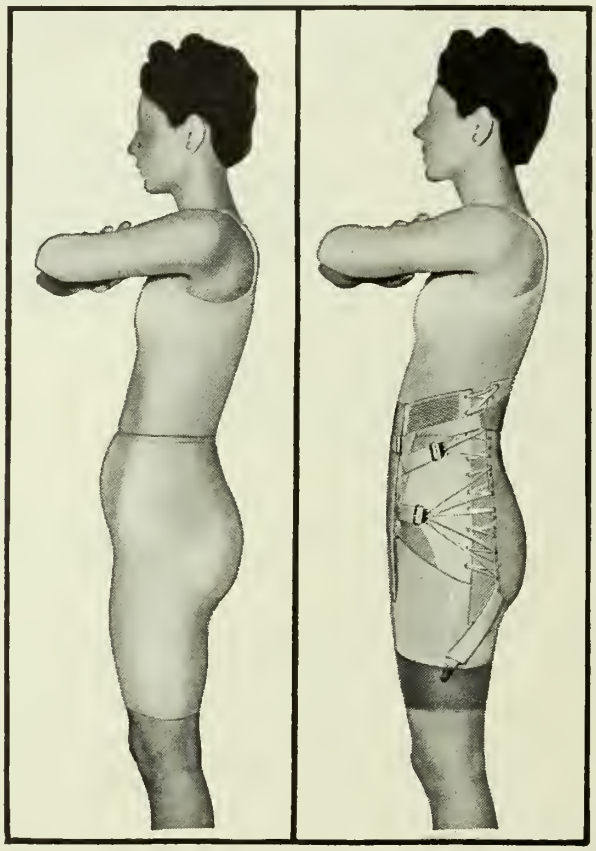
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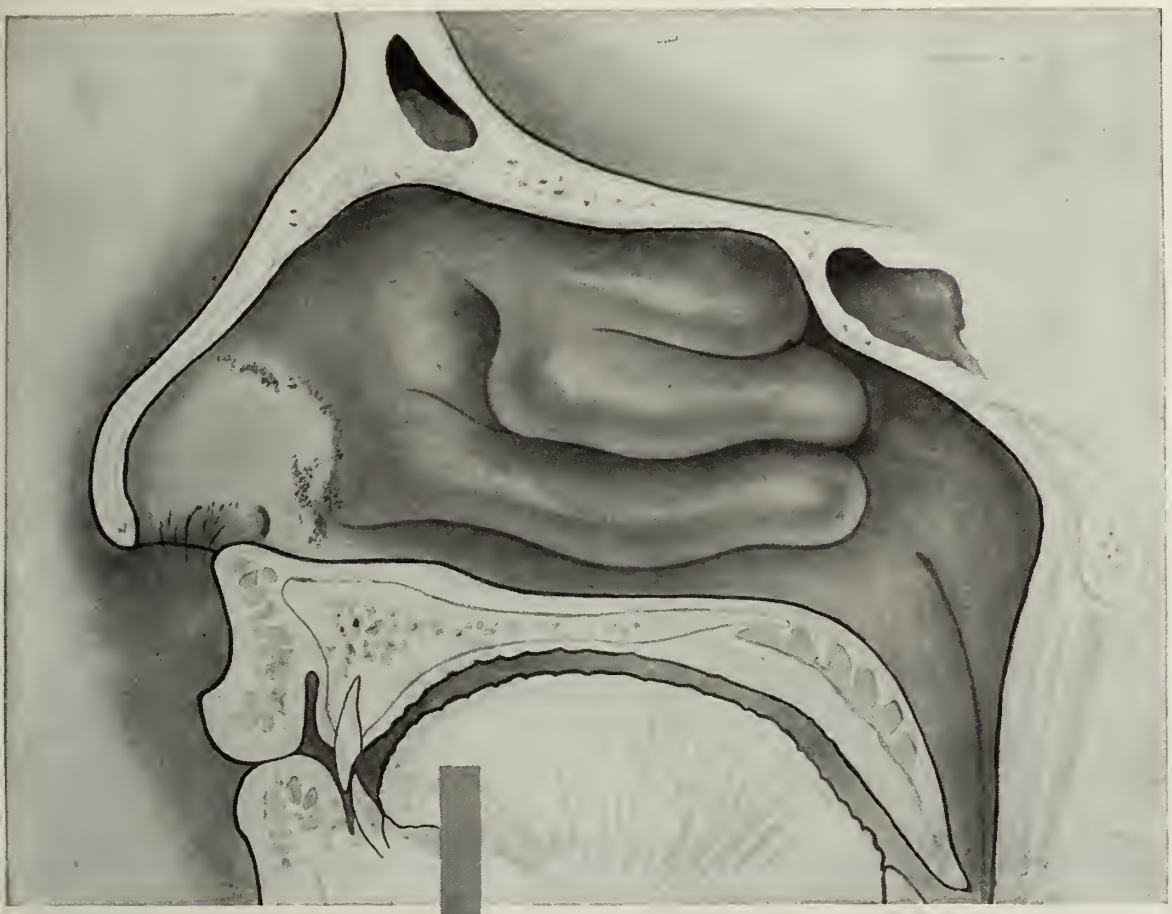
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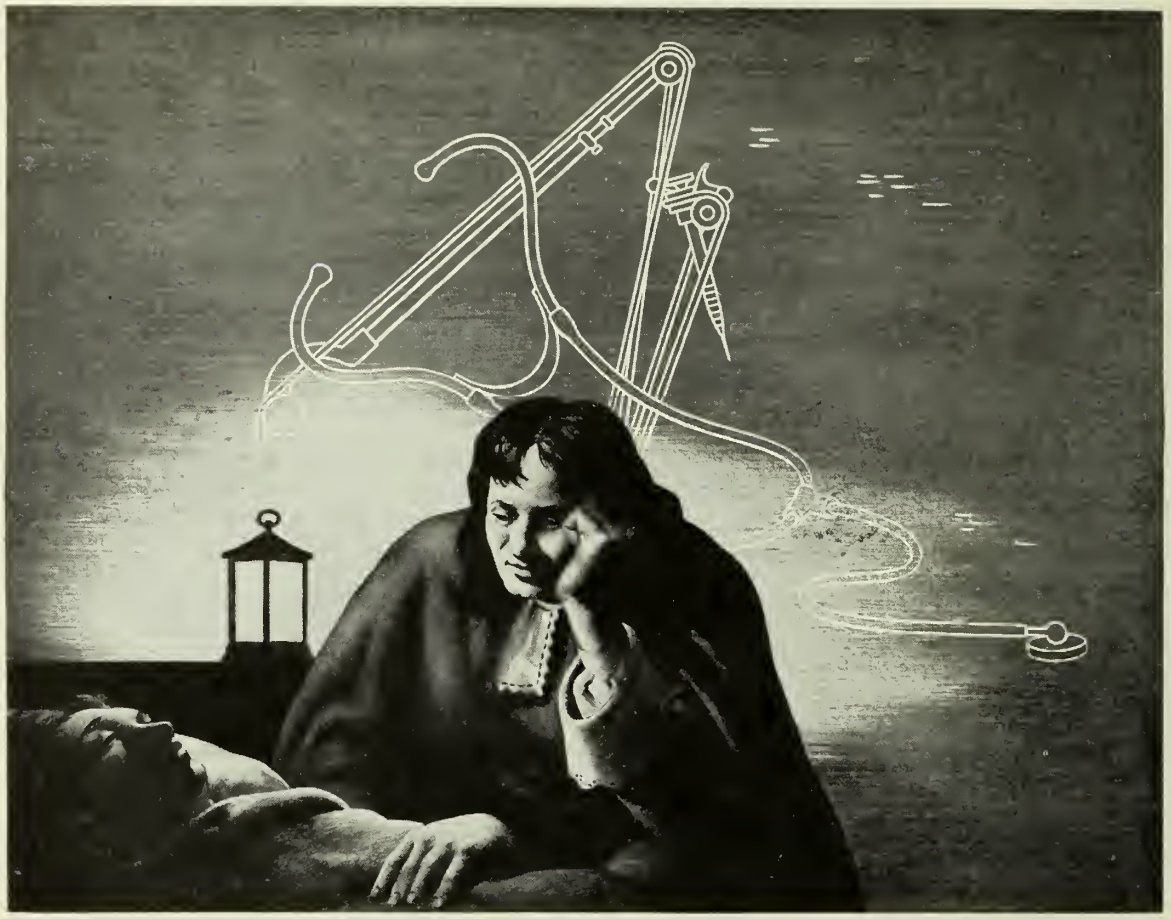
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Issued Monthly under direction of the Publication Committee

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VOLUME 45 — MARCH, 1948 — NUMBER 3

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ACUTE PERFORATION IN GASTRIC CARCINOMA

JOHN MODLIN, M.D., *Columbia, Mo.*

ACUTE PERFORATION occurs quite often in benign peptic ulcerations and most surgeons are familiar with the syndrome and its proper management. The same, however, cannot be said about perforation in gastric carcinoma inasmuch as few surgeons have the opportunity to observe more than a single case. Moreover, when confronted with such an emergency, the surgeon may not have had experience with this condition and may even fail to recognize the presence of malignancy. The edema and acute inflammation attendant upon such a perforation may mask the underlying tumor and, unless carcinoma is suspected, it may be treated as a benign perforation. Since simple closure of a perforated gastric malignancy is doomed to failure in a high percentage of cases (Bisgard quotes an 80 per cent mortality), the importance of a correct diagnosis at the time of operation cannot be overemphasized.

The following case is cited as an illustration of the problem:

REPORT OF CASE

C. R., male, aged 67, was admitted to the Ellis Fischel State Cancer Hospital on July 25, 1947, complaining of epigastric distress accompanied by occasional nausea and vomiting for some fifteen years. Six months prior to admission the patient noted an accentuation of these symptoms with roentgenologic evidence of "pyloric obstruction." One week prior to admission he noticed tarry stools. There was a weight loss of twenty pounds in six months.

Physical examination revealed a moderate midepigastric abdominal tenderness but no palpable abdominal mass. A gastrointestinal roentgen-ray series was started on July 28; the preliminary films suggested pyloric obstruction. Twelve hours following the roentgenologic examination the patient complained, suddenly, of severe upper abdominal pain and became nauseated and vomited. Abdominal examination revealed upper abdominal tenderness but signs of generalized peritoneal irritation were absent. Because of the clinical picture, with lack of fever, and leukocytosis, a conservative policy was adopted; but six hours later a roentgenogram of the abdomen (with the patient in an upright position) showed free air under both sides of the diaphragm. A diagnosis of perforated gastric ulcer, probably malignant, was made and twelve hours after the onset of symptoms an exploratory laparotomy was performed under continuous spinal anesthesia. Upon opening the peritoneal cavity, the upper abdomen was found to be the site of an intense inflammatory reaction with a perforation of the anterior wall of the stomach near the lesser curvature, having been localized by the liver and anterior abdominal wall. A frozen section biopsy was taken from the edge of the perforation and was diagnosed as carcinoma. Further ex-



Fig. 1. Preliminary roentgenograph of stomach, showing prepyloric lesser curvature deformity.

From the Department of Surgery, The Ellis Fischel State Cancer Hospital.

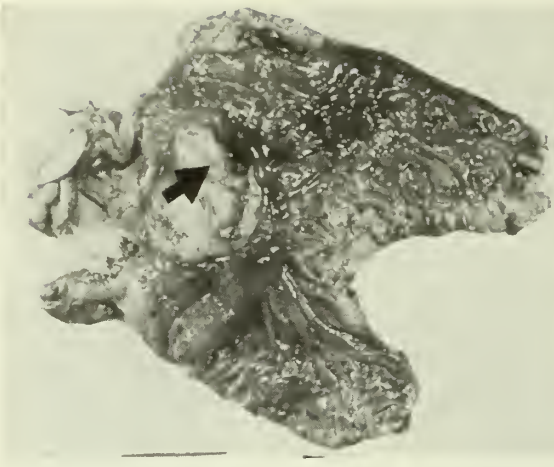


Fig. 2. Resected specimen showing carcinomatous ulcer. Arrow indicates site of perforation.

ploration of the abdomen, previously withheld for fear of disseminating a localized peritonitis, then revealed extensive lymph node metastases in the region of the celiac axis with metastasis to the left lobe of the liver. A palliative subtotal gastrectomy of the Polya type was performed and a biopsy of the metastatic nodule in the left lobe of the liver was taken. The abdomen was closed with interrupted figure of eight steel wire sutures.

Examination of the operative specimen was reported by the Department of Pathology as follows: "The specimen consists of a portion of the body of the stomach, pyloric antrum and approximately 0.5 cm. of duodenum. Its dimensions are 14 by 8 by 2 cm. In the anterior wall, 3.5 cm. proximal to the pyloric sphincter and 2.5 cm. below the lesser curvature, there is a stellate perforation approximately 1 cm. in diameter. There is distinguishable fibrinous exudate in the serosa around this area and the subserosa presents numerous confluent areas of firm yellowish-white tumor which extend for a radius of 2.5 cm. about the perforation. On opening the stomach there is a large crater-like ulceration at the site of the pyloric antrum. The perforation is found to be just below the proximal margin of the ulcer. Microscopic examination reveals carcinoma extending through all layers of the stomach. It is growing extensively in lymphatics. The serosa is covered with fibrin. Two lymph nodes are almost completely replaced by tumor, a third is partially replaced. One section shows tumor invading the pancreas. The section of liver shows a nodule of carcinoma partially replacing it."

The patient had an entirely uneventful postoperative course and was discharged to his home on the eleventh postoperative day.

INCIDENCE

The incidence of perforated gastric carcinoma is difficult to determine, probably only a few of the total number of these cases having been reported. In 1824, Laennec recorded the history of a patient with a fatal peritonitis resulting from a perforated gastric malignancy and since that time less than 250 cases have been recorded in the literature. Boyce reported thirty-six instances of perforated gastric carcinoma at Charity Hospital in New Orleans over an eighteen year period, but he agrees that the condition occurs much more frequently than is realized. In addition, McNealy and Heden recorded 133 cases between 1925 and 1937 at two hospitals in Chicago. The recorded incidence of perforation in gastric carcinoma varies from 2.8 to 6 per cent (Bisgard), so that the condition, although infrequent, is by no means rare.

DIAGNOSIS

In general, the clinical picture of perforated gastric malignancy falls into one of two groups. The acute type simulates benign peptic perforation into the free peritoneal cavity. This syndrome, occurring in a patient within the cancer age, should stimulate the surgeon to consider a carcinoma of the stomach among the diagnostic possibilities. In the second type, obscure clinical syndromes occur by virtue of localized perforations. Generalized peritonitis is prevented by limitation of spread beyond the pancreas, liver, lesser omentum and anterior abdominal wall. These already debilitated patients continue rapidly to their death, the perforation usually being demonstrated at autopsy. The case reported falls into the second type although the clinical picture was subacute in nature. Brunschwig states that two thirds of the cases fall into the group without acute phenomena.

If the possibility of a perforated gastric malignancy is entertained in patients with signs of acute peptic perforation, the diagnosis usually will be made at operation. If the perforation proves to be proximal to the pylorus, a routine frozen section biopsy from the area of the perforation should be performed. In the past, the correct diagnosis has not often been determined prior to operation or necropsy and, indeed, for practical purposes, the correct preoperative diagnosis, while desirable, is not of extreme necessity. The surgeon, however, must be prepared to proceed with a frozen section biopsy at the time of operation in order that the correct therapy may be instituted at once.

TREATMENT

Permanent cure in uncomplicated carcinoma of the stomach is achieved in only a fraction of the total number of cases. Perforation in these cases creates an emergency situation and although this complication adds to an already unfavorable outlook, the surgeon must be ready to deal vigorously with the situation in order to prevent an immediately fatal outcome. Recent advances in surgical physiology have permitted increasing numbers of palliative resections for advanced carcinoma of the



Fig. 3. Photomicrograph showing ulceration. Arrow indicates perforation.

stomach, and the presence of perforation should not influence the surgeon toward a more conservative technical procedure. Perforation and the associated peritonitis does not necessarily preclude radical resection. As pointed out by Bisgard, the recorded mortality for simple closure of malignant perforation of the stomach approaches the formidable figure of 80 per cent. This is understandable when one considers the friable carcinomatous tissue through which suture material must necessarily be placed. By way of contrast, nineteen radical resections (including the one reported here) for perforated gastric carcinoma have been recorded in the literature with three deaths (a mortality of 16 per cent). Although it is granted that only the more favorable cases may have been reported, nevertheless, radical resection seems to be definitely superior to simple closure of the perforation. Bisgard believes that 50 per cent of these cases will prove resectable. Boyce, on the other hand, presents a more gloomy viewpoint for he believes that the vast majority of cases are hopelessly inoperable at the time of perforation.

SUMMARY

Perforation in gastric carcinoma, although not rare, occurs infrequently enough so that the surgeon may not be familiar with the problems of correct diagnosis and proper surgical management. To avoid errors in the handling of these cases it is necessary to be cognizant of the fact that in all gastric perforations, carcinoma should be ruled out by means of biopsy at the time of operation. If carcinoma is found to be present, radical gastric resection is the procedure of choice when it is technically feasible. Simple closure of a malignant perforation of the stomach is attended by an extremely high operative mortality, while the recorded mortality for gastrectomy in these cases is approximately 16 per cent.

The case history of a patient suffering from a perforated carcinoma of the stomach and treated by subtotal gastric resection is presented.

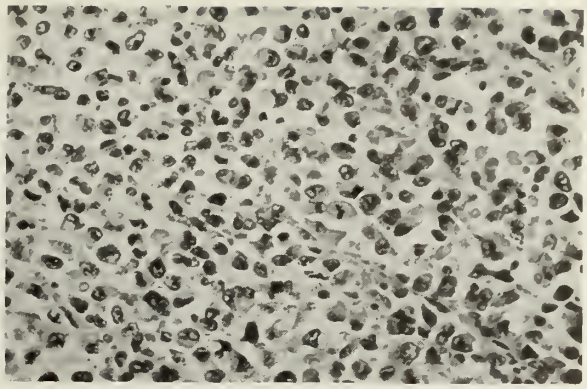


Fig. 4. Photomicrograph showing anaplastic type of carcinoma of stomach.

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PRINCIPLES IN TREATMENT OF BENIGN PROSTATE ENLARGEMENT

A. LLOYD STOCKWELL, M.D., *Kansas City*

PROSTATIC hyperplasia produces variations from normal micturition in more than 35 per cent of males beyond the age of 50. The symptoms of hesitation, slow stream, nocturia, frequency and dysuria signal changes of altered vesico-urethral function. After the residual urine has been measured, the diagnosis of obstruction made and its type determined by rectal examination, cystourethrogram and cystoscopy, what sound advice can be given the patient as to successful and permanent relief of his symptoms?

Medical management so far offers uncertain results. Catheter life is inconvenient, an invitation to infection and unnecessary. However, Wolbarst[1] records relief in one of his patients by catheter, lavage and mechanotherapy over several years' time. Practically all the hormones and especially the sex hormones have been advocated for treatment of benign hyperplasia with many conflicting reports. Testosterone propionate, the first available, was used by Heckel[2] in some instances, 4,000 mg. being used over a fifty-six week period with no benefit. Histologic changes in the eventually removed glands were no different than untreated hyperplasia. Further experience[4] substantiates these conclusions. Heitz-Boyer[3] records similar conclusions with testosterone and found no change in the prostate following its use. Heckel[4] used estrogenic therapy in thirty-five patients treated from twenty-eight to four hundred ninety-eight days under carefully controlled conditions. Temporary relief of symptoms occurred in a small percentage, but residual urines remained the same with no demonstrable changes in size of the glands. The surgically removed glands of the patient that had received estrogenic therapy differed from normal in showing vacuolization and hydropic degeneration. When the estrogen was discontinued, the symptoms returned and the hyperplasia continued. Klein and Newman[5] studied twenty-five patients treated with diethylstilbesterol and observed shrinkage of the prostate for at least six months. Only 25 per cent showed any disturbing reactions to therapy (mastitis, impotency) with disappearance of those symptoms upon withdrawal of the drug. Pierson[6] followed the changes in prostatic size after stilbesterol

Read before the K. C. South West Clinical Society, October 8, 1947.

therapy by means of rather exact lateral roentgen rays at frequent intervals. He concluded, "reduction in size is too little and clinical improvement too indefinite to warrant using stilbesterol therapy at present." Krischesky and Benjamin[7] studied the effect of natural and synthetic estrogens upon intraocular prostate gland implants in both intact and castrated rabbits. Estrogen in the intact animal caused reduction in size of the gland implants while under therapy, but the atrophy was reversible when therapy stopped. After castration, similar therapy produced the opposite, or hypertrophy. In my own clinical experience, of twenty-two patients placed on estrogen therapy from two to twenty months, sixteen came to surgery, three were relieved enough that no further treatment was desired, and three could not be traced. Medical therapy is as yet unable to offer certain and permanent relief comparable to surgery in the benign hyperplasias.

Surgical relief of hyperplasia permits a choice of endoscopic, transurethral, suprapubic, perineal and retropubic (Millen) enucleations, each with increasingly enviable results and decreasing morbidity and mortality when executed by the qualified urologic surgeon. Surgery is but one step in the integrated complex management of returning the dysuric bladder of a sick male to normal function. The principles of management regardless of the type of surgery are: selection of cases, treatment of acute and chronic large volume retention; preparation and drainage; use of chemotherapy and antibiotics; when to operate; type of operation; use of established principles and technics for each type of surgery and its complications, and attention to details that decrease the postoperative morbidity. The desired end result is a patient whose life expectancy has been increased with normal assurance the hyperplasia will not recurr, who voids with ease and control, and exhibits unchanged sexual function.

Selection of cases is no longer a problem in a patient under good urologic management. Age, severity and length of symptoms offer a challenge but not an obstacle to surgery, and no patients need be denied relief from prostatism.

Acute and chronic large volume retention when treated by sudden decompression formerly was followed occasionally by disturbing sequelae and even death. Van Zwallenberg (1920) introduced gradual decompression, which has however been generally abandoned since Creevy (1932) demonstrated the reactions were due to infection and not decompression. I have utilized immediate decompression for ten years, in conjunction with chemotherapy and correction of body fluid electrolyte imbalance, with good results. Slight hematuria may occur for twenty-four hours but is never a serious problem.

Preparation has undergone changes from prolonged management to rather brief, in favor of earlier operation in suitable cases. Preoperative drainage of the bladder via intermittent catheterization, indwelling catheter or cystostomy in every case formerly was advocated for not less than ten days (Cabot, Keys, Young, Hinman). For the last few years I have used no preoperative catheter drainage except in the dysuric, retentive or severe nitrogen retention patient. The use of the 18f Foley catheter is superior to intermittent catheterization and far more comfortable. If prolonged drainage in infection or severe azotemia is indicated, a simple trocar cystostomy is the least disturbing to the patient, and closes very quickly when the need for suprapubic draining has ended. Preparation includes study of renal function, especially the intravenous urogram; blood urea, and serum electrolytes; the blood count; electrocardiograph; cystourethrograms; determination of type of prostatic obstruction, the general physical findings, and correction of nutritional defects. These elderly men so often present general complicating illnesses accompanying their prostatism that close cooperation with the family physician and the internist is quite necessary. Cystoscopy formerly was done several days before the operation, at some inconvenience to the patient. For the last two years, I have followed the suggestion of McCarthy, Vest and Rose, of doing the cystoscopy at the same time as the operation under the same anesthesia. One elects the operative procedure then and proceeds, although one usually already has a probable operative method in mind.

Chemotherapy and antibiotics have been used since their successive introduction, with increasingly satisfactory results—clearer urines, decreased preoperative and postoperative febrile reactions, less urethral secretion around the indwelling catheter; and decrease in the formerly troublesome postoperative persisting cloudy urines accompanied by varying degrees of dysuria. Sulfadiazine is the drug of choice preoperatively in most instances, although in cases with elevated urea nitrogen it is probably safer to omit sulfa therapy until adequate drainage has been established. Infection has always been a major cause of complication in prostatic surgery. With aseptic preoperative technic, or preferably no catheterization unless necessary, and the use of the sulfa drugs, the majority of the patients develop a satisfactory decrease in urinary infections, most of which are gram-negative bacilli, with the B. coli predominant. Sometimes gram-positive microorganisms predominate, especially the staphylococci, and the combined use of penicillin with sulfa produces results superior to either alone.[8] In the rare instances of persisting pyuria in which proteus vulgaris and B. pyocyaneous are isolated, streptomycin may be helpful as it is the only agent that seems to inhibit these organisms. For practical purposes it is advisable to use sulfa and penicillin in combination in maximum dosage until the sixth or seventh postoperative day, and longer if infected urines persist or recur in subsequent weeks. Continued experience reveals that improvement in the urinary infection is coincidental to adequate drainage and good surgery.[9]

When to operate is a decision requiring mature experience. In general I have come to the following conclusions that help me consider the patient a safe risk: (1) He must be able to be out of bed and walk; (2) he must put out from 1,500 to 2,000 cc. of urine following a 3,000 cc. twenty-four hour intake; (3) he must have a nonprotein nitrogen that is stabilized, and preferably be under 75 (though it is satisfactory to operate with a higher nonprotein nitrogen that refuses to drop after stabilization following adequate treatment); (4) the blood CO_2 and electrolytes near normal; (5) blood picture near normal; (6) no serious infections manifest; (7) the I-V pyelogram near normal; (8) the cardiac status near normal and, for this, I confess the history of no dyspnea, edema, precordial pain have been of more help than the electrocardiogram although I routinely obtain the latter. All of these factors may be obtained within twenty-four hours after admission to the hospital or not until several days or weeks have passed. Regardless of time, when he meets the requirements, the patient may undergo surgery safely. I have found myself operating earlier and earlier, to the patient's advantage physically and economically.

The choice of type of operation to be applied will depend largely upon the urologist's personal experience, as well as the type of gland and associated pathologic condition. The surgeon elects that technic which produces consistent results in his hands with the lowest morbidity and motility.

Transurethral resection has been used in 79.5 per cent of my experiences of the past four years, (of which 2.3 per cent had the complication of vesical calculi requiring litholapaxey, and 1.4 per cent revealed intravesical tumor removed at the same time as the prostate). This operation was applied to 96 per cent in my early experience, but I have ceased the prolonged resection of the large gland (anything more than 55 to 65 grams) in favor of the simple quick suprapubic technic with early bladder closure, that I have used in the last two years.[10] Transurethral resection requires greater experience than any of the other methods and increasing familiarity with it allows the urologist wider and better application until he does a complete endoscopic enucleation. The operation is particularly suitable to the poor risk patient and, in all instances, offers a short morbidity and good result. Postoperative bleeding early, or late as from three to four weeks is an infrequent though disturbing complication. However, dealt with immediately, recovery is prompt. Transurethral resection requires much more detailed postoperative attention by trained personnel than does open surgery. In 487 consecutive cases the average hospitalization for private cases was 8.3 days; for clinic cases, from 8 to 21 days postoperatively, (the delay being an economic problem usually). The overall operative mortality for both groups was 3.3 per cent. Ages ranged from 42 to 93 years.

Suprapubic prostatectomy, when used as a one stage procedure with careful attention to details of technic, offers an excellent means of quick removal of all of the adenoma, particularly for large glands. It is the method of choice if the bladder must be opened for large calculi. A well done enucleation produces no disturbing shock, permits the patient to be out of bed the first or second postoperative day, and the total blood loss is often less than in a prolonged transurethral resection. I have used oxycel gauze and gelfoam with and without thrombin, placed in the prostatic fossa after enucleation with satisfactory hemostasis. These agents have almost eliminated the problem of bleeding and lessened the need for the time consuming suture control of hemorrhage as in the Harris or Lower technic. Occasionally one may need to clamp the large bleeders only, leave the hemostat in situ a moment, and electrocoagulate through the hemostat, then, fill the fossa lightly with gelfoam (preferably saturated with thrombin and squeezed fairly dry) or oxycel gauze held in by a moderately distended Foley bag catheter. The only reason for prolonged morbidity is suprapublic leakage. With careful closure of the bladder after enucleation, around a small suprapubic catheter (or in some instances primary closure), removal of the suprapubic catheter on the third morning and retention of the urethral catheter until the fourth or seventh day, most bladders remain quite dry. Particularly is this true when one utilizes some type of suture that is placed at operation, from the skin down to and around the cystostomy so that the suture can be pulled up tightly on the third postoperative morning when the suprapubic tube is withdrawn, and draw the cystostomy wound closed to prevent any leak. Johnson[11] and De Vries[12] and I[10] have successfully utilized such technics. In thirty-nine instances with this method the hospital stay has been from nine to thirteen days, averaging ten and a half days, with no deaths, and only four cases were wet suprapubically.

Perineal prostatectomy has been done for twenty-two benign cases, while total radical perineal has been done for five early carcinomas. It is an operation that is surprisingly easy on the patient. Two occasional complications sometimes follow. Urethral stricture follows it often enough to cause me and the patient modest inconvenience. Impotence has been present in all but two. There was one death, two and a half months postoperatively due to gradual inanition. (For early carcinoma it is the procedure of choice.) There is little or no shock and the patient can be out of bed the next day. The hospitalization averaged from twelve to twenty days postoperatively.

Retropubic prostatectomy, done from above without opening the bladder, has been introduced by the London surgeon, Millin. His presentation and end results were favorably received at the 1947 meeting of the American Urological Association, and further experience will give it proper evaluation.

CONCLUSION

Since prostatism is likely to manifest itself in more than 35 per cent of males over 50 years of age with many accompanying general infirmities, the family physician and urologist need offer a positive program of therapy. Medical treatment is as yet rather inconclusive. Some temporary relief may occur following the use of estrogens, though most of my patients so treated eventually required surgical relief. Permanent relief is offered by the surgical technics of endoscopic transurethral resection, and the suprapubic, perineal and retropubic enucleations each with comparably good results. Adequate preoperative study and preparation indicate the safest time for surgery. Chemotherapy, antibiotics and the new hemostatic agents have greatly reduced the hazard of infection and hemorrhage. No patient, regardless of his age or condition, need be denied relief.

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GOUT: A Review of Diagnosis and Management

PAUL O. HAGEMANN, M.D., *St. Louis*

Among the various arthritides, gout is most frequently misdiagnosed. This is most unfortunate for patient and physician alike since appropriate and relatively satisfactory therapeutic measures are not employed.

Gouty arthritis is not uncommon, its incidence varying from 1 to 5 per cent of patients with joint complaints.[1] Since the advent of modern chemotherapy, gouty arthritis outranks gonococcal and all other types of specific infectious arthritis combined. The disease is seen predominantly in males (95 per cent), and occurs in all races and at all ages. Contrary to popular conception this condition is not confined to the well-to-do or "high-livers."

ETIOLOGY

Gout results from a congenitally altered purine metabolism, which is inherited as a recessive trait. Careful metabolic studies suggest that there is increased urate formation and not decreased excretion in people with the gouty diathesis.[2] The symptomatology and pathology of this disease has a direct bearing on the deposist of sodium urate crystals in various tissues of the body.

PATHOLOGY

Deposits of sodium urate characteristically begin in relatively avascular tissue such as cartilage, epiphyseal portions of bone, tendons, ligaments and bursae. Depots in cartilage or bone enlarge by contiguous spread and healthy tissue is replaced. In joints, such destruction eventually may be associated with changes seen in degenerative (hypertrophic) arthritis. In soft tissue, such as bursae and subcutaneous tophi, there is a foreign body reaction characterized by fibroblasts, giant cells and neutrophilic leukocytes about the crystal deposits.

The kidney is affected grossly and microscopically since urates precipitate in the kidney parenchyma and give rise to secondary vascular changes. Not infrequently urate stones form in the pelvis and ureters.

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SYMPTOMATOLOGY

In order to grasp the clincal picture of this disease it is essential to subdivide it into (a) acute, and (b) chronic gouty arthritis.

(a) *Acute Gouty Arthritis.*—Characteristically, the patient with an initial attack of gouty arthritis is a robust male from 40 to 50 years of age who is incapacitated in a matter of hours by acute joint pain. The involved joint soon presents the cardinal signs of inflammation with a dusky red color of surrounding skin. In the majority of instances the metatarso-phalangeal joint of the great toe is involved but other joints or even the olecranon bursa or Achilles tendon may be the primary site. There may be fever, tachycardia and other evidences of systemic reaction. Even if untreated, the attack will subside in from three to seven days with no residual disability. Desquamation of skin over the involved joint is highly characteristic in the stages of recovery.

Laboratory data may include leukocytosis, elevated sedimentation rate and an elevated plasma or serum uric acid. Roentgen-ray pictures of the involved joint are normal except for soft tissue swelling.

The response to colchicine is so dramatic and satisfactory as to constitute a diagnostic feature. As this acute episode passes, the patient again presents no abnormal findings except, perhaps, an elevated plasma uric acid level. The interval between such episodes varies widely but averages about one year. With subsequent episodes there is a tendency for untreated attacks to last longer and the free interval gradually becomes shorter. In every in-



Fig. 1. Typical tophi in the ear (left) and enlargement of the olecranon bursa (right). Both lesions due to deposits of sodium urate.

stance there is complete recovery with no residual joint signs or symptoms between episodes.

(b) *Chronic Gouty Arthritis.*—The stage of chronic gouty arthritis begins as soon as residual joint abnormalities develop. This may be from ten to twenty years after the first acute episode. Urate deposits become more extensive and are then visible as tophi in the ear, along tendons or about joints. Symptomatically, the patient is more apt to have continued complaints, but acute exacerbations are no longer characterized by the sudden, severe and dramatic episodes. Complications such as ureteral stones or renal insufficiency may make their appearance.

The development of tophi is not a prerequisite in any sense as only 45.7 per cent of patients develop them at all.[3] (fig. 1). Likewise, the roentgen-ray changes compatible with gout (fig. 2) are seen in only one third of cases.[3]

Tophi may drain spontaneously or may become so cumbersome as to require surgical excision.

PRECIPITATING FACTORS

Acute episodes of the gout are apt to follow certain events; hence, from the diagnostic as well as the prophylactic standpoint, it is well to bear them in mind. Contrary to popular opinion, excesses of food and drink are not apt to precipitate acute attacks. Either trauma, minor injury or excessive exercise serve as a common localizing as well as a precipitating factor. Acute infections of any sort, likewise, seem to bring on acute attacks. Acute arthritis occurring from three to seven days postoperatively is often gouty. Certain drugs such as liver extract, mercurial diuretics, ergotamine tartrate, gold salts and thiamine seem to provoke attacks.

LABORATORY DIAGNOSIS

Plasma or serum uric acid levels above 6 mg. per cent, in the absence of kidney insufficiency, leukemia, polycythemia and other blood dyscrasias are considered diagnostic of the gouty diathesis.[2, 4] Such levels can be obtained on occasion prior to the development of the first attack of gouty arthritis and presumably have existed since childhood. In general, uric acid levels are more erratic and less consistently elevated in the stage of acute gouty arthritis and become more persistently elevated in chronic gout.[5] Whole blood uric acid levels run considerably lower, but this method of determination has not been widely used or accepted.[6] Most normal individuals have serum uric acid levels below 4 mg. per cent but a small percentage will range up to 6 mg. per cent.[7] It is the values between 4 and 6 mg. per cent which are difficult to interpret and in which repeated determinations must be made.

Demonstration of crystals of sodium urate is diagnostic of gout (fig. 3). Crystals may be obtained by scraping the white gritty, cheesy material from a tophus, aspiration of a bursa or joint or by biopsy. The crystals can be examined by direct smear without the use of stain or preparation of any sort. They are long needle-shaped crystals, occasional bundles having a blunt-ended bacillary appearance. The crystals can be further identified by the murexide test:[8] Suspected material is heated in a porcelain dish with a few drops of dilute nitric acid. A red residue, alloxan, remains when all of the nitric acid is driven off. A few drops of ammonia solution are added after the dish is cool and a purplish red color develops due to the formation of murexide or purpurate of ammonia.

Biopsy specimens should be fixed in absolute alcohol instead of aqueous solution of formalin, since crystals are dissolved by the latter. A satisfactory method for staining such tissues has been described by DeGalantha.[9] Sections of tophi show crystal deposits surrounded by foreign body reaction.

Unfortunately, this means of unequivocal diagnosis is available only if tophi develop, which may be many years after the first attack.

Roentgen-ray diagnosis is extremely unsatisfactory as the "punched-out" areas considered suggestive of the gout are seen frequently in rheuma-

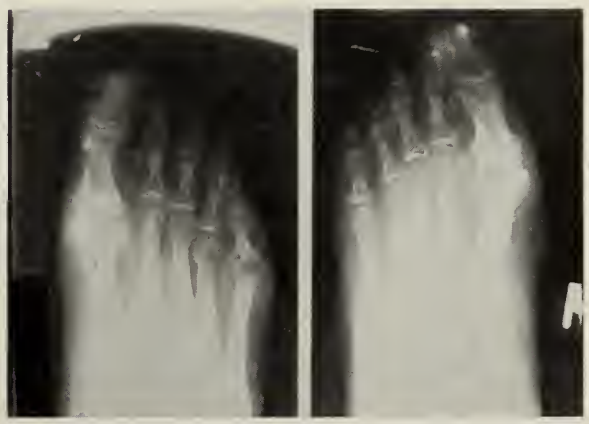


Fig. 2. Roentgen-ray pictures showing "punched-out" areas in the head of first metatarsal, right and left. Complete destruction of fifth metatarso-phalangeal joint, left.

toid arthritis, to some extent in degenerative (hypertrophic) arthritis and in a number of unrelated diseases. The most common site of "punched-out" areas is in the head of the first metatarsal bone; however, other bones of the foot and bones of the hand often are involved. Roentgen-rays at best give suggestive information, which serves to stimulate the clinican to investigate the possibilities of gouty arthritis. As has been pointed out, roentgen-rays are normal in the stage of acute gouty arthritis and characteristic changes are not the rule even in the chronic gouty arthritis.

TREATMENT

Acute Gouty Arthritis.—Colchicine is practically specific for relief of acute attacks, especially when taken promptly after appearance of symptoms. Tablets of 1/100 to 1/120 gr. (0.6 to 0.5 mg.) should be given every hour until either symptoms are relieved or until side effects develop. The usual attack will respond to from eight to ten tablets. Colchicine is then continued in smaller dosage for several days until one is assured that the attack has completely subsided, e.g., 1/100 gr. (0.6 mg.), three times daily. Principal reactions to this medication are diarrhea, nausea and vomiting. With some experience the individual patient can adjust his own dosage so as to get optimum results and minimal side effects. The mode of action of colchicine is not known, but it does not lower plasma uric acid levels or act as a urate diuretic. Codeine may be used freely if necessary.

Interval Regime.—Between acute attacks the object of treatment is to decrease the frequency and severity of attacks. The value of dietary restriction is not established clearly. Clinical experimentation in Talbott's laboratory indicates a lack of correlation between severity of gouty attacks and diet and still Talbott advises his patients to eliminate foods high in purine content, namely, liver, kidney, thymus, pancreas, anchovies, sardines and brains.[2] Moderate limitation in the intake of animal protein and fats is probably worthwhile and the degree of restriction can be adjusted to the needs of the individual patient.

Moderate exercise of involved joints seems to be of value. Liberal intake of fluids is advised so that urinary output is between 1,500 and 2,000 cc. Alcohol intake should be moderate. Aspirin and sodium bicarbonate 2 to 4 gm. (30 to 60 gr.) of each per day may be given three days of each week. Colchicine 0.5 to 0.6 mg. (1/120 to 1/100 gr.) may be taken prophylactically, one to three tablets per day, three days of each week. This medication certainly should be taken if prodromata are recognized and can be discontinued if the attack does not materialize.



Fig. 3. Typical crystals of sodium urate aspirated from an olecranon bursa, as seen in an untreated smear under low power of microscope.

Chronic Gouty Arthritis.—The plan of therapy in the chronic stage does not differ materially from that previously outlined. Urate deposits may require removal either because of their size, position or ulceration. Cinchophen and neocinchopen are no longer widely used in the management of gout because of the danger of liver damage. These drugs act as urate dieuretics just as aspirin does, and their use should be reserved for patients not responding to the more conservative regime.

SUMMARY

Gout should be suspected when recurrent acute arthritis without residual symptoms develops in a middle aged man. A satisfactory response to colchicine is most suggestive. Roentgen-ray changes and elevated blood uric acid level make the diagnosis more certain. Demonstration of urate crystals makes the diagnosis unequivocal.

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CITE FATAL CASE OF DDT POISONING

A case of fatal poisoning through accidental swallowing of a commercial DDT preparation is reported in the February 14 issue of *The Journal of the American Medical Association* by Nathan J. Smith, M.D., Department of Pathology, Veterans Administration Center, Wadsworth, Kansas.

The victim was a man of 58 who drank, accidentally, an insecticide which contained five per cent DDT. Within an hour he was suffering from severe gastrointestinal symptoms. They continued with increasing severity, and five days later he was admitted to the Veterans Administration Center in Wadsworth. Treatment proved futile and he died the next day.

At autopsy degenerative changes were found in the liver and kidney. When rabbits were experimentally poisoned with the same insecticide or given five per cent DDT in kerosene (another ingredient of the insecticide), the same effects were noted at autopsy.

THE MISSOURI STATE BLIND PROGRAM

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ACCORDING TO THE Revised Statutes of the State of Missouri 1939, "Every adult blind person twenty-one years of age or over, of good moral character who shall have been a resident of the State of Missouri for ten consecutive years . . . and every adult blind person twenty-one years of age or over who may have lost his or her sight while a *bona fide* resident of this state . . . shall be entitled to receive . . . an annual pension . . . provided that no such person shall be entitled to pension . . . who has an income of . . . of $900.00 or more per annum . . . or who owns property . . . to the value of $5,000.00 or more or who lives with a sighted husband or wife" who meets these restrictions or who has a parent able to provide for reasonable support, those in public or private institutions, or while publicly soliciting alms.

No person is entitled to a pension who has vision of more than light perception or hand movements greater than one foot as examined by a certificated ophthalmologist. A pension of $30.00 per month is allowed. Any person desiring benefits should apply to a Probate Court or to the Bureau for the Blind. He then will be examined by a certified ophthalmologist who will be paid $5.00 for each applicant examined. This sum will be deducted from the first pension payment if the pension is granted. In the event the application is refused, the fee is paid by the Bureau for the Blind. No person under 75 years of age is entitled to benefits who refuses treatment or operation when recommended by the oculist.

On July 1, 1946, a Department of Health and Welfare was established as a department of state government. Its purpose was to improve and protect the health of the people of the State of Missouri and to care for the mentally ill. The department is composed of three divisions: Health, Mental Diseases, and Welfare.

All work pertaining to blindness in the State of Missouri is under the Division of Welfare and is performed under the jurisdiction of the following departments: Pension, Home Teaching, Prevention and Vocational Rehabilitation.

As already stated, to qualify for a pension for the blind the applicant must have lost his sight while in the state or have been a resident of Missouri for at least ten consecutive years and must have an income of less than $900.00 per annum. The function of the Department of Pensions is to accept the applications for blind pensions, to see that they are investigated by the field social worker, that they receive an examination by a certificated ophthalmologist and that the applications be passed upon.

The Department of Home Teaching has the responsibility of entering the private home of a blind adult citizen and to teach him to care for himself. Children are sent to the Missouri School for the Blind in St. Louis. The teachers who go into the homes are blind as it is felt that much of their success will come from the fact that they have overcome the handicap and have risen above it. The teachers are certified and trained in case work and in the sociologic aspect of eye diseases. They teach cooking, Braille, crafts, washing and ironing, housekeeping and, in fact, anything intended to make the blinded individual independent in his own home. However, these teachers are handicapped in travel and must be accompanied by a sighted guide. As the department is not charitable, the recipient need not be a pauper and the home teacher can do her best work amongst those recently blinded. The department asks for referrals directly from ophthalmologists. The department in Kansas City may be contacted by calling Dora Tolle at Chestnut 1211.

The Department of Prevention is on a charity level. Its duties are educational including holding clinics for the indigent in need of eye care. In 1943 an appropriation was voted for funds for surgical and medical care and committees were established. The committee in each county consists of the probate judge, the county health officer, the county nurse and others as appointed. The committees make recommendations to the Bureau. Also under the Department of Prevention is a glaucoma control program which publishes pamphlets and cards to assist and educate the general practitioner, through the National Society for the Prevention of Blindness, in recognition and the reporting of cases of glaucoma and the classifying of all records as to cause.

The first act on rehabilitation was passed in 1920. Its purpose is to aid in the vocational adjustment or readjustment of the disabled civilian. It is quite obvious then, by definition, that the scope of this branch of the Division of Welfare is comprehensive. It was not until July 1943 that special provisions were made for the blind. Vocational rehabilitation services are for blind adult civilians; that is, those over 16 years of age. The federal government pays for 50 per cent of the case cost and also all of the administrative expense. Its objective is that the client become employed or employed more advantageously. There are three regional vocational rehabilitation offices in the state: 613 Fidelity Building, Kansas City, under Mrs. Ann Harford; 1202 City Hall, Springfield, under Gladys Frances, and 818 Olive Street, St. Louis, under Madge Walker. In each office is a vocational councilor and an industrial specialist whose job is to place the blind in industry. They contact industry for the employing of the blind and make surveys. The industrial specialist is always a blinded person. The service

of this office is open to any person having vision of 20/200 or less or whose ocular defects are progressing. The applicant must be 16 years of age or older, vocationally handicapped, unemployed or working at an unsatisfactory job. The office must know the applicant's physical, psychologic and vocational factors. Referrals come from any source but the office is anxious to receive them directly from the ophthalmologist. The applicant is first examined by a certified eye physician to whom the office pays $10.00. The applicant then is sent to a qualified general practitioner for examination including a blood test. For this the office pays $5.00. The applicant need not be a pauper to receive this service.

The medical consultant reviews the medical reports and makes recommendations. If the recipient is in need of any physical restoration, this can be provided; but after the first examination the office of vocational rehabilitation pays only if the applicant is unable to do so. Provisions are made for maintenance, appliances, hospitalization and surgery. Hospitals are paid according to a per diem rate and the surgical fees are paid according to a fee schedule set up by the Board. This care is given only in cases in which it is thought that the person can be made employable. The advisory committee is composed of professional men, medical, legal and the clergy. The services may be industrial placement, professional placement, vending stands, small retail business, agricultural or home industries.

1404 Bryant Building

Acknowledgments are made to Mrs. Lee Johnston, Director of the Bureau for the Blind, and to Mrs. Ann Harford for their help and information in the preparation of this paper.

AMPUTATION BY PRESSURE NECROSIS

DESCRIPTION OF A SIMPLE DEVICE

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Several devices for the amputation of gangrenous toes were developed to eliminate the objections inherent to self amputation or the use of a wire alone; i. e., time, uneven pressure, entanglement with a bony projection, introduction of infection. The one that appears to be the best is presented. It furnishes a means of accomplishing the amputation in a shorter length of time and makes high amputation unnecessary in many cases.

This device is a cylinder with an elliptical edge, conforming to the shape of a toe. The pressure surface is of the same thickness as the wire used. At either end of this elliptical cutting edge is a "slit" proportioned to accommodate a wire of the same diameter which encircles the toe to be amputated. A threaded piece of metal or screw fits into the cylinder; on either side of it is a small groove to take the wire, keep it straight and insure even pressure. At the top of this piece of threaded metal is a groove, over which each end of the wire can be twisted tightly. A circular nut larger than the cylinder and threaded to fit the screw is used. As this nut is tightened against the cylinder, the wire loop under the toe is drawn tighter and the elliptical edge of the cylinder is pressed against the skin, exerting the same pressure on the full circumference of the toe to be amputated. If a projection of bone or a condyle is encountered, the nut can be unscrewed or loosened. With an attendant making traction on the toe, the wire can be adjusted to engage the soft structures of the joint.

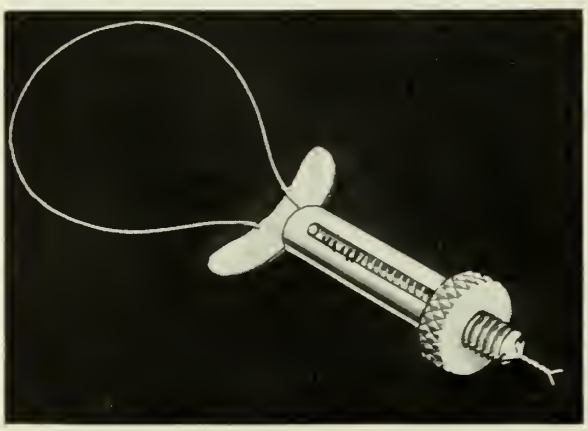


Fig. 1. Instrument used for amputation.

The device is light in weight and one or more can be used on any or all of the toes of a foot. Its use does not interfere with other medication such as foot soaks. It can be sterilized and used indefinitely on other cases. A small worm gear made to move a circular gear attached to a shaft around which the wire is drawn, exerting even pressure around the toe to be amputated, accomplishes the same results.

METHOD OF APPLICATION

The patient should be given an immunizing shot of antitetanic and gas bacillus antitoxin before applying the wire amputator. Elevate the extremity to make it as avascular as possible. After the wire and the elliptical edge of the cylinder are placed in the desired position (while the extremity is elevated), twist the nut rapidly and tight enough to shut off any possible blood supply. Naturally, this will cause the wire and the elliptical edge to be embedded; skin and pressure necrosis start immediately. All metabolic processes stop. Except occasionally for slight discomfort on proximal healthy

skin, pain is relieved. As all blood vessels and lymph channels are obstructed, absorption of toxins or infection from the distal gangrenous area is reduced to a minimum.

If amputation is at a joint, the nut is tightened every day until the toe is off; or, if not at a joint, until the shaft of the bone is encountered. When amputating a toe at the joint, if the wire is obstructed by a bony process, loosen the nut and, while an attendant makes traction on the distal end of the toe, adjust the wire loop so it will engage the soft structures; then tighten daily until the toe is off. After all soft structures have been cut through to the bone by pressure necrosis, if amputation is on the shaft of a phalanx, the distal end can be cut off painlessly and with no danger of ascending infection while the device is still applied. After a few days of antiseptic dressings, the wire amputator can be removed. The periosteum of the shaft of bone can be pushed back ¼ inch with a small chisel and the bone taken off with forceps. No attempt should be made to curette the bone or suture the skin. Penicillin or sulfa drugs can be given as a prophylaxis against infection or osteomyelitis. The wound should be left open and allowed to heal by granulation. Moist dressings should be applied constantly to promote drainage and healing.

The pressure necrosis amputator has been used on twenty-three cases of gangrenous toes: nine cases of arteriosclerosis obliterans, eleven of arteriosclerosis obliterans with diabetes, two of thromboangiitis obliterans (Buerger's disease) and one of gangrene due to freezing. None of the cases of arteriosclerosis obliterans with or without diabetes felt severe pain, only a slight discomfort when the device was tightened each day. The patients with Buerger's disease were apprehensive of pain so 2 per cent novocain made in penicillin solution was injected about one inch proximal to the gangrenous area before the device was applied. Neither of these patients complained of severe pain after the first application of the device. The patient with the frozen toe complained bitterly of pain each time the wire was tightened. He was extremely nervous, which probably accounted for some of the pain; however, that is not certain. If the wire is applied tightly from the beginning, there should not be any pain distal to the application of the device, as all metabolic processes cease.



Fig. 2. A. Seven days of pressure were required to remove the toes. B. Six weeks later.



Fig. 3. This patient had diabetes. The toe came off after six days of pressure and healed in three additional weeks.

With the exception of thromboangiitis obliterans, most gangrenous toes are on old people who have a great many other physical disabilities such as general arteriosclerosis, kidney disease, heart disease or diabetes. Under the most favorable circumstances most of these old people have only a few years to live; they have passed to the period of their lives when they are happy with their grandchildren and their churches. As they do not adjust themselves readily to prostheses, amputation above the knee spells an end to their limited activities and happiness. Surely any procedure that will speed up self amputation of a toe or toes and substitute for a high amputation of a leg should be acceptable. Not only is adjustment to artificial legs highly improbable in old people, but a high percentage of them do not live or recover from an amputation.

This method of speeding up self amputation is not intended to be a substitute for well recognized indications for amputation but rather to fill a gap between cases of poor surgical risk and those that offer good chances for recovery and adjustment to prostheses.

SUMMARY

A simple method of amputating gangrenous toes on patients who are poor surgical risks by pressure necrosis is presented. The use of stainless steel wire, 0.010 of an inch in diameter, twisted tightly around the toe or toes to be amputated is given. The attendant difficulties encountered and a description of a device that eliminates to a great extent these difficulties, simplifies the procedure and reduces the dangers of ascending infection is presented. I cannot see any reason why this simple method of amputation could not be used on the leg or the arm of patients of extremely poor surgical risk.

822 Argyle Building

THE SIGNIFICANCE OF POTASSIUM AND BROMIDE IN THE METABOLISM

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The various salts in the organism are exceedingly important in maintaining the exact equilibrium within the cells. Each single constituent is of great value. However, there are technical difficulties in exact determinations of the intracellular salts. Most values are gained from the analysis of the whole organ, including the cells, intracellular tissue and blood. Each of these constituents has a distinctive composition, shows great variation in diverse animals and even varies after ingesting various foods. In each of these component structures, moreover, salts may be present in different physical forms, as, in real solution, as compound with albumin and such. Sometimes organs contain salts which occur only as accidental admixture of food; even these salts, according to their physical qualities, may have some influence on the cells.

On the whole, most of the individual salts have a special significance and the specific amount in which they occur in the various organs have particular meanings. The specific task of most of the salts, however, is unknown. Still more mysterious are the ways of keeping the elements constant in the different organs. It is known that the glands of internal secretion play a leading role in this mechanism, such as the parathyroid for calcium and the thyroid gland for iodine.

POTASSIUM

In this discussion of potassium facts easily found in every handbook will be omitted.

Red blood cells and blood serum have the following partial composition, figures which may be compared with the pure cell juice of the vacuoles of the ocean plant, valonia, and the surrounding ocean water.

Mgs. per 100 cc.

	Serum	Blood Cells	Ocean Water	Cell Juice of Ocean Plant Valonia
Sodium	335	0	1.09	.21
Potassium	19.5	420.0	.05	2.01
Calcium	9.6	0	.05	.06
Magnesium	3.2	3	.13	Trace

These figures show the prevalence of potassium within the cells, even in the low organisms.

Potassium has a great influence on the muscle of the skeleton and heart and on the nervous system. For instance, the muscle action in myasthenia gravis is definitely improved when potassium is given in larger amounts (from 20 to 40 grams a day). In Addison's disease the rise of potassium in the serum is accompanied by an elevation of the T wave of the electrocardiogram.[1] There are patients with other disturbances in which potassium may be increased or decreased abnormally and which show a corresponding rise or fall in the T wave.[2] The influence of potassium on the nervous system can be understood easily from the fact that potassium is the only mineral cation in nerve cells which contain, for instance in crabs, thirteen times more potassium as does blood serum. W. Feldberg[3] reported that potassium liberates acetylcholine from nerve ganglia. This explains why vagal stimulation of the heart is more effective under the influence of potassium. But, also, there is a close connection between potassium and the sympathetic nerves. Camp and Higgins[4] showed that constriction of bronchi induced by histamine is relieved by potassium just as much as by epinephrine. Other organs similarly react to both substances. Although the conclusion of Camp and Higgins that changes effected by epinephrine actually are produced by potassium might be contestable, there is no doubt but that potassium increases the sensibility and activity of both the sympathetic and vagal system.

The simplest explanation for this specific influence of potassium on the muscle and the nervous system can be found in the numerous and seemingly accurate experiments of Zwaardemaker and his associates.[5] They are based on the discovery of Campbell and Wood[6] that potassium is radioactive, probably through the admixture of 1 per cent of isotopic potassium. The energy of the radiation is small: 1 gram of potassium gives about 1.8 by 10-5 ergs per second. Zwaardemaker showed that potassium is the carrier, and the only carrier, of the radioactivity in the body; he tried to prove for the heart, blood vessels, peripheral nerves and kidney the presence of such a radioactivity. He used organs with automatic motion (bowels, heart) which stop functioning spontaneously when exposed to Ringer solution without any potassium ion. A frog heart, for instance, stops pulsating when it loses about $\frac{1}{6}$ of its potassium contents. The function returns after addition of potassium to the solution. The influence of potassium on the muscle can be substituted by a series of compounds, provided that they are also radioactive and that they are used according to the degree of their radioactivity. Zwaardemaker showed this effect on the heart and the esophagus muscle of the frog and on the heart and the uterus of mammalia. He used for his experiments uranium, thorium, radium and emanation. The effect of the latter one is especially important because it is an indifferent gas without any affinity. When stoppage of the heart muscle of the frog was achieved through withdrawal of potassium, even the use of Buckyrays (soft x-rays) was able to stimulate the heart to regular beats. Zwaardemaker's conclusion that the biologic activity of potassium is due to its radioactivity was sup-

ported by J. Gunzburg[7] and O. Loew[8] while Clark[9] and especially A. S. Glazko and M. D. Greenberg[10] disagreed with him. Even if the results of Zwaardemaker's experiments are not yet proven, the radioactivity of potassium in the body, although weak, is still a fact which is bound to have some consequences. For instance, practically all potassium lies within the cells; the sensitive balance in cells must be influenced greatly by the rythmic emissions of the B and Gr. rays. There are several theories about the very delicate neuromuscular transmission of nerve impulses. Some consider it to be chemical; others feel it to be electrical. All agree on the importance of potassium for nerve impulse conduction. "The resting nerve has a potential difference between the surface of the fiber and its interior. With conduction of a nerve impulse, potassium diffuses toward the surface and is restored under rest. This outward diffusion of potassium is an essential factor in the development of the potential change which is connected with every nerve impulse."[11] The radioactivity of potassium is necessarily of primary importance in this complicated mechanism.

The realization of such connections may explain some clinical experience. The influence of potassium iodide in asthma and in sclerosis may be partly a potassium effect. Potassium in larger amounts is valuable in myasthenia gravis and also in heart block because of its stimulating effect on the muscle. The use of adrenal cortex in shock and in some stages of heart failure may be based on the rearrangement of potassium in the tissues.

It is not yet proven that an increased intake of potassium in food is of practical importance. The ratio of potassium to sodium which is normally 1.5 to 1, can be changed in the same tissues to 2.4 to 1 if the diet given contains chiefly potassium. The influence of a fixed nourishment is shown by the fact that insects have about the same ratio of potassium to sodium as the plants on which they live. People probably now take much more potassium than in previous times, especially in countries which use artificial fertilizer extensively, which frequently contains much potassium. The increased use of artificial fertilizer is especially important in that most salts pass down through the various layers of the soil. Potassium, however, is absorbed and fixed in the upper layers which plant life uses. Because all plants have mineral constituents similar to the ground in which they grow, one can assume that plants raised on land with artificial fertilizer contain now much more potassium than in previous times. This fact is intensified by the present tendency of eating raw food to avoid the demineralizing effect of cooking.

Probably more important than the intake of potassium is the regulation of the potassium metabolism. Members of the Mayo Clinic have done research in this. The influence of the suprarenal cortex is definite. Some of the sterols of this gland regulate the distribution of electrolytes, especially of sodium and potassium. They control the concentration of potassium within the cells and of sodium in the extracellular fluids. Desoxycorticosterone lowers the concentration of potassium in the serum. In the opposite clinical picture, in adrenal insufficiency of man, the cells lose potassium into the serum which shows a rise of potassium above normal. The loss of function of cardiac accelerator nerves in such cases can be explained easily through the disturbance of the potassium metabolism.

The influence of the suprarenal cortex on the distribution of potassium means that one of the functions of this gland is the regulation of the biologic radioactivity.

BROMINE

Bromine has a significant function in the body. Its exact role has not yet been determined. In 1926, Bernhardt and Ucko[12] found that the pituitary gland contains more bromine than any other organ in the body. In 1931, I[13] demonstrated the high amount of bromine to be principally in the anterior lobe. Bromine also was increased in the middle lobe, but distinctly less than in the anterior lobe. The determinations of the intermediate lobe, however, had to be considered as doubtful because of the difficulty of getting it absolutely free of the anterior lobe. In none of the various extracts of the anterior lobe, used for medical purposes, could increased bromine be found. This indicated that during the manufacturing process the bromide compound was eliminated without diminishing the specific effect of the different extracts. Thus, the bromine in the anterior lobe must have a function separate from these extracts. The periodic relationship between iodine and bromine suggested the possibility that the anterior lobe serves either as a storehouse for bromine in manufacturing a specific compound or that it controls the bromine metabolism in the same way as the thyroid governs the iodine metabolism.

The following values[12] are important:

Organ	*Bromine*
100 Gram Substance	Milligram
Hypophysis (dessicated)	75 to 150
Hypophysis (fresh)	15 to 30
Suprarenal gland (fresh)	1.4 to 1.6
Thyroid (fresh)	.07 to 3.0
Aorta (fresh)	2.0 to 2.4
Human Blood serum (fresh)	.9 to 1.2

Zondeck and Bier[14] reported in 1932 the results of their exhaustive studies. They also concluded that, of all the organs, the anterior lobe of the pituitary gland had the highest bromine content. They found the bromine level in the serum not influenced by season, menstruation, nourishment or amount of sodium chloride. Their thought of a special organic bromine compound with sleeping function which wanders during sleep from the anterior lobe to the medulla oblongata, could not be confirmed by other authors. Their average bromine value in serum was between .73 and 1.10 mg. per cent. These

values were decreased especially in maniac depressive patients and in some cases with organic lesions of the hypothalamus.

The bromine contents of the anterior lobe of men between 45 and 60 years of age is about 15 mg. per cent; in women of this age 5 mg. per cent; in older people, both sexes have from 5 to 6 mg. per cent.[14] It may be significant that the bromine contents in women are decreased just in the menopause.

Because tiny traces of bromine constantly accompany chlorides, in table salt too, there is necessarily some bromide in the body fluids. That it cannot be considered only as an accidental admixture can be concluded from its preponderance just in the anterior lobe.

The composition of the specific bromine compound in the anterior lobe is unknown. It may be a cyclic compound for these take up halogens much more readily than compounds of the aliphatic chain. The configuration may be determined by the close connection between tyrosine and the halogens. For instance, iodine is in the thyroid as thyroxine, which is related to tyrosine, and as diiodotyrosine. Certain corals have a high content of bromide (up to 4 per cent) in form of 3.5 dibromotyrosine; in some sponges the iodine is also found as a diiodotyrosine.

It is not yet determined whether the anterior lobe is only the manufacturing place for the organic bromine compound or, as compared to the thyroid gland and iodine, the regulator of the bromine metabolism. Further examinations in cases of marked disturbances of the anterior lobe may disclose which cells are the carriers of special bromine compound. The use of stable isotops may clear the fate of bromide in the body. Radioactive isotops may influence specifically the anterior lobe of the pituitary gland.

1310 Bryant Building.

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RECURRENT MUMPS VERSUS RECURRENT PAROTITIS

CASE REPORTS

CARL L. KLINE, M.D., *Columbia, Mo.*

AND

LaRUE S. HIGHSMITH, M.D., *Columbia, Mo.*

Inflammatory conditions of the parotid glands often present difficult diagnostic problems. This is especially true in young adults who have a definite history of having had mumps in childhood. While it is definitely known that recurrent attacks of mumps occasionally occur, they are indeed rare. Few cases are reported in the literature, and little has been written about the differential diagnosis between recurrent attacks of mumps and so-called recurrent parotitis.

Bigler[1] has presented a satisfactory classification of parotid inflammations, as follows: (1) mumps, a specific type of infection that is contagious; (2) suppurative parotitis, an inflammatory reaction that usually occurs during the course of the infectious diseases, postoperative conditions and occurs in newborn infants; (3) obstructive parotitis occurs from the irritation of a calculus, and (4) recurrent parotitis, an inflammation of the parotids of obscure etiology which occurs in otherwise healthy individuals and which runs a benign course.

Table 1 illustrates the differential diagnostic features between the two conditions.

The following two case reports illustrate some of the differential diagnostic features and the difficulties involved:

CASE REPORT. RECURRENT PAROTITIS

Case 1. A 19 year old, single, white, female college student reported to the college infirmary on December 13, 1946, with a diffuse, bilateral moderate parotid gland swelling. There was no submaxillary involvement and no cervical adenopathy. Her temperature was 98.4 F. She gave a definite history of mumps in childhood, and this was verified by her parents. Inasmuch as Christmas vacation was only a few days away, she was sent home the same day.

On February 7, 1947, she returned to the dispensary complaining of recurrence of her bilateral parotid swelling of two days duration. She stated that, while at home during the holidays, the swelling had subsided rapidly but she had noticed a slight recurrence on several occasions (three week period). Both parotids were found to be slightly tender and the duct orifices slightly inflamed and swollen. Her leukocyte count was 10,900 with 65.1 morphonuclears and 32.1 lymphocytes. Her sedimentation rate was 17 in 60 minutes (Cutler). Roentgen ray study of her parotids was normal; dental study and roentgen ray were normal, and probing of the ducts revealed no stones or other obstruction. She remained afebrile and had no discomfort, except that she worried about her appearance and the persistent swelling. She was permitted to remain in class and was watched closely over a period of one month. During that time the glands fluctuated in the

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*Dolkart, R. E.; Dentler, M., and Barrow, L. L.: The Effect of Various Types of Therapy in the Management of the Irritable Bowel Syndrome. Illinois M. J. *90*:287 (Nov.) 1946.

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Table 1. *Diagnostic Features*

	Mumps	Recurrent Parotitis
Age	8-14, but at any age	8 months on
Etiology	Virus	Obscure, probably an ascending infection
Incubation Period	18 days	Unknown
Prodrome	Chills, restlessness, fever, malaise, muscular aching, sore throat, anorexia. May be absent.	Seldom occur and are mild when present
Swelling	Sudden in onset. Involves whole gland. Usually marked. Unilateral or bilateral. Recurrences in same or different gland. Submaxillary glands often involved. Reaches maximum in 4-5 days and subsides in same time. Parotid involved in 90 per cent and bilateral in 70 per cent.	Sudden in onset. Involves whole gland. Rarely as extreme as mumps. Unilateral or bilateral. Recurrences usually in same gland. Submaxillary never involved. Reaches maximum within 48 hours. May subside rapidly or require several weeks. Recurs within few days or may be month between attacks or even up to 2-3 years. Parotid always involved, usually unilateral.
Fever	99-103, may be absent	May be absent or may be up to 104
Stenson's Duct Opening	Not inflamed as a rule. No pus.	Moderately red and edematous. Pus can usually be expressed.
Pain	Difficulty in swallowing and pain on mastication. Usually tender.	Present in varying degree, rarely severe. Tenderness varies, rarely severe.
Toxicity	Often present during prodrome and period of swelling.	Rarely present
Hematology	Leukopenia with lymphocytosis	Leukocytosis with increase in polymorphonuclears
X-ray	Negative	Negative
Bacteriology	Virus	Usually streptococcus viridans. Sometimes staphylococcus aureus, rarely pneumococcus.
Immunology	Contagious	Not contagious
Prognosis	May involve gonads with resulting sterility.	Benign.
Treatment	Symptomatic. Isolation.	Symptomatic. Penicillin appears to be of some value.

amount of swelling present and, on March 3, 1947, all swelling had disappeared. There has been no further recurrence to date (May 14, 1947).

CASE REPORT, RECURRENT ATTACK OF MUMPS

Case 2. A 19 year old white, female college student reported to the school infirmary on April 1, 1947, complaining of painful swelling of her left cheek. She gave an unquestionable history of mumps at age 8, and this was verified by her parents. On admission her temperature was 99.4 F. Examination revealed a diffuse, tender swelling of her left parotid and left submaxillary glands. No inflammation or edema of the salivary ducts was noted. Her blood count revealed 10,450 leukocytes with 80 per cent polymorphonuclears and 18 per cent lymphocytes. Five days later there were 8,650 leukocytes with 56 per cent polymorphonuclears and 33 per cent lymphocytes, 8 per cent eosinophils, and 3 per cent monocytes. (She had a year-round allergic rhinitis, which explains the eosinophilia.) On April 3 her sedimentation rate was 21 mm. in 60 minutes (Cutler).

During her first four hospital days the swelling became progressively more severe, and she had considerable pain in the area involved. Her temperature fluctuated between normal and 99.6 F., with a daily elevation. Roentgen ray study of the left parotid and maxillary was normal. Dental examination, including roentgen rays, was normal. An ear, nose and throat specialist probed the parotid duct, and this examination was negative for pathologic findings. The swelling began to subside on her sixth hospital day and had completely subsided by the eleventh day. She was discharged on the twelfth hospital day and has remained well.

SUMMARY

A table of differential diagnosis between recurrent parotitis and mumps is presented. A case of recurrent parotitis in a 19 year old girl and one of recurrent mumps in a 19 year old girl are reported. The differential diagnosis between the two conditions is difficult and must often await observation of the clinical course.

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ACTION NEEDED TO PREVENT EPIDEMIC OF HUMAN PLAGUE IN U. S.

If proper preventive action is not taken immediately, the United States may find itself in the middle of an epidemic of human plague, according to an editorial in the February 14 issue of *The Journal of the American Medical Association.*

The editorial follows:

"Human plague appeared for the first time in the United States in the Chinese quarter of San Francisco March 6, 1900. Between that date and Jan. 1, 1940, eight states reported cases of human plague—Washington, Oregon, California, Utah, Nevada, Texas, Louisiana and Florida. During 1946 infection had been found in ground squirrels and other rodents as far east as the Mississippi Valley. The United States Public Health Service has conducted campaigns for the eradication of infected rodents since 1908. The budget for such eradication dropped from $200,000 in 1912 to $51,000 by 1915. This campaign, coupled with efforts by the individual states, still continues but has languished considerably.

"R. H. Creel, M.D., estimated in 1941 that a well organized and well sustained campaign financed by approximately $2,500,000 would virtually eliminate rodent plague in the United States. To date the needed funds have not been forthcoming. This condition is a definite threat of human plague in epidemic proportions in the United States. The main conditions necessary for epidemics of human plague are infected rodents, the flea transmitter and susceptible persons in close proximity. Overcrowded housing conditions in many large cities tend toward the establishment of the conditions necessary to epidemic outbreak. Proper preventive action is needed immediately."



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PRESIDENT'S PAGE

THE HOSPITAL survey of the state has been completed. According to the report released by the State Division of Health and approved by the State Hospital Advisory Council, there are 13,342 acceptable general hospital beds in the state, 4,904 short of the need.

The Council approved recommendations calling for at least twenty-five new hospitals of fifty beds or more, additions to seventeen existing hospitals and construction of a number of public health centers. If the recommendations are approved by the Surgeon General of the U. S. Public Health Service in Washington, the federal government will supply one third of the cost of building and equipping the hospitals. The remainder of the cost is to be borne by any governmental unit, charitable institution or individual that meets federal specifications for nonprofit hospital facilities.



It is expected that under the terms of the Hill-Burton Act, approved in 1946, the federal government will make available to Missouri a total of $11,400,000 during the next five years on an allotment basis of $2,280,000 a year.

The erection of these hospitals should go a long way toward solving the rural medical problem in Missouri.

The Association assisted in the survey and stands ready at all times to give its help in carrying out the objectives of the program.

Morris B. Simpson,

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MARCH, 1948

EDITORIALS

IT IS BY REQUEST

It is by request that the program of the 90th Annual Session is arranged. Presentations were chosen by the Committee on Scientific Work based upon requests from physicians throughout the state for specific subjects for the Annual Session program. Requests made to the Committee on Postgraduate Course for speakers before component societies also were considered in the selections. The Committee arranging the program feels that the suggestions were well chosen and that the program will be one of the most practical ever presented. The program appears on page 214 of this issue of THE JOURNAL.

The order of business of the House of Delegates follows the program in this JOURNAL and delegates that have been reported are listed.

Scientific exhibits and technical exhibits will be practical and furnish the physician information that he can apply to his practice.

Hotel reservation blank is on page 208. Good accommodations are still available.

WHAT IS A STATE MEDICAL SOCIETY?

The Executive Secretary of the Connecticut State Medical Society, Creighton Barker, M.D., says the following of state medical organizations:

"I have asked myself 'What is a state medical society?' Is it a scientific and educational organization as we would have the Bureau of Internal Revenue believe? Is it a protective guild of skilled craftsmen? Is it a polite device for spreading propaganda? Is it a special minority for influencing legislation? Is it a social club through which one may extend his acquaintance and prestige? Is it an institution for public service? Of course no single answer is enough. Medical societies try to be, and are, combinations of them all. Some emphasize certain things more than others with varying degrees of success, but this is what they try to be. It is complicated, isn't it, when you stop to think of it? And it is further complicated when it is acknowledged that a society—any society—is people. It is people that confuse it most and the people who make up a medical society are something special, all educated, mostly intelligent, quaintly conceited, strict individualists usually with a common interest and peculiarly unselfish. Mix them all up and add a few honest and some bogus idealists and a spatter of the unscrupulous and you have a medical society, an organization the like of which is hard to find. . . .

"At the last I want to say that the profession of medicine is not just a company of odd little men each intent on making as much money as he can. There is something in medicine that is bigger than any one of us and that fine bigness can find its expression best through our medical societies."

HEALTH OF INSURANCE APPLICANTS

Ninety-five out of 100 applicants for life insurance obtain policies, the Institute of Life Insurance reports. This is indicated by an analysis of one year's applications of companies representing approximately one half of all ordinary life insurance purchased. The study, just concluded, shows that more than 95 per cent of the applicants received policies, 85 per cent being standard rate policies and 10 per cent extra rate policies.

Fewer than 5 per cent did not secure the life insurance they applied for, and these failed to qualify chiefly because of serious physical impairments. Heart trouble and high blood pressure constituted the chief causes of uninsurability, together accounting for one half of all the cases. Overweight was another important cause.

Fewer than one half of 1 per cent of all persons applying for insurance failed to obtain it because of underwriting qualifications other than physical, including occupation, location of residence, application for too much life insurance relative to income, habits or excessive drinking.

"The percentage of life insurance applicants who secure policies has been increased in recent years," the Institute said, "as a result of experience gained through the careful screening of applicants made by all life insurance companies. These companies would like to insure every applicant. They exert every effort to extend the benefits of life insurance protection to as many as possible. But in the interests of the existing policyholders, they must set up certain standards to avoid accepting applicants with a probability of high mortality.

"At the same time, applicants with minor impairments have benefited by the careful screening. Certain conditions which formerly were uninsurable may now be classed as warranting issuance of policies. Many of these cases require an extra premium, but in some of them policies may now be issued at standard rates.

"Outstanding progress has been made in connection with the issuance of policies to persons with certain physical impairments. Recent developments, especially the use of the electrocardiogram, have

enabled the companies to accept many persons with minor heart conditions, including certain types of murmurs and other heart impairments.

"Life insurance has also been made available to a limited degree to diabetics in recent years and on an even broader basis to those whose urinalysis shows a limited degree of sugar, whereas both of these types of persons formerly were turned down.

"In the aggregate, many thousands of persons annually secure life insurance today who were uninsurable only a relatively few years ago, and this has been made possible by the companies' continuous research into possible means of extending coverage to more people.

NEWS NOTES

A. L. Walter, M.D., Sedalia, was the guest speaker at a meeting of the Sedalia Underwriters Association on January 3. His subject was "What the Medical Profession Has Done to Reduce the Mortality Rate."

Howard Miller, M.D., Macon, was the principal speaker at the first meeting of the Macon County Health Council on January 12.

Paul L. Barone, M.D., Nevada, has been named superintendent of State Hospital No. 3.

Jesse E. Douglass, M.D., Webb City, discussed "New Treatments of Tuberculosis" at a meeting of the Fifth District Nurses' Association at Joplin on January 13.

Hugh McCulloch, M.D., St. Louis, was elected president of the St. Louis Heart Association at a recent meeting. Drew Luten, M.D., St. Louis, was elected vice president and Arthur E. Strauss, M.D., St. Louis, secretary-treasurer.

A regional meeting of the American Society of Anesthesiology and the Kansas City Society of Anesthesiology will convene in Kansas City at Hotel President on April 4, 5 and 6.

Missouri State Board of Medical Examinations will be given at the St. Louis University School of Medicine, St. Louis, on May 24, 25 and 26, and at Washington University School of Medicine, St. Louis, on June 10, 11 and 12. Applications are due in thirty days prior to the examination and should be sent to John A. Hailey, Executive Secretary, State Board of Medical Examiners, P. O. Box 4, Jefferson City, Missouri.

Physicians who have appeared on programs of component medical societies recently under the auspices of the Committee on Postgraduate Course follow:

Arthur W. Neilson, M.D., St. Louis, spoke at a meeting of the St. Francois-Iron-Madison-Washington-Reynolds County Medical Society on "The Diagnosis and Treatment of Syphilis."

Everett D. Sugarbaker, M.D., Jefferson City, spoke at a meeting of the Phelps-Crawford-Dent-Pulaski County Medical Society on "Tumor of the Breast."

Ralph Kinsella, M.D., St. Louis, spoke at a meeting of the Jasper County Medical Society on "Endocarditis."

M. Pinson Neal, M.D., Columbia, spoke at a joint meeting of nine county medical societies at Chillicothe on "Diagnoses Commonly Missed in General Practice."

Fred Kyger, M.D., Kansas City, spoke at a joint meeting of twelve county medical societies at Clinton on "Office Gynecology."

Louis Jorstad, M.D., St. Louis, spoke at a meeting of the Phelps-Crawford-Dent-Pulaski County Medical Society on "Organic Lesions of the Stomach and Small Intestines."

Delon A. Williams, M.D., Kansas City, spoke at a joint meeting of eighteen county medical societies at Warrensburg on "The Management of Peptic Ulcer."

David V. LeMone, M.D., and Jack Modlin, M.D., Columbia, spoke at a joint meeting of nine county medical societies at Chillicothe on "The Scout Film in X-Ray Diagnosis."

Peter Heinbecker, M.D., St. Louis, spoke at a meeting of the Second Councilor District at Moberly on "Diagnostic Problems of the Acute Abdomen."

Thomas M. Martin, M.D., St. Louis, spoke at a meeting of the Phelps-Crawford-Dent-Pulaski County Medical Society on "Diagnosis and Management of Malignant Tumors of the Mouth and Esophagus."

R. O. Muether, M.D., St. Louis, spoke at a meeting of the Second Councilor District at Moberly on "The Rh Factor."

Bruce D. Kenamore, St. Louis, spoke at a joint meeting of eighteen county medical societies at Farmington on "Recent Advances in the Management of Peptic Ulcer."

Daniel B. Landau, M.D., Hannibal, spoke at a meeting of the Second Councilor District in Moberly on "Infant Feeding, Immunizations and General Care Through the First Year of Life."

DEATHS

Wallis, William M., M.D., Maryville, a graduate of the Central Medical College, St. Joseph, 1903; member of the Nodaway-Atchison-Gentry-Worth County Medical Society; Fellow of the American Medical Association; aged 67; died December 12.

Smith, Seth Paine, M.D., St. Louis, a graduate of Washington University School of Medicine, 1905; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 65; died December 19.



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Hotel reservations for the Annual Session should be made direct to the hotel of choice. Early reservations will insure obtaining the reservation desired. The application following may be used in place of a letter to the hotel. Following are some of the hotels with rates.

		Two persons		*2-Room Suites*
	One person	*Double bed*	*Twin beds*	
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DeSoto, 1014 Locust	2.75- 7.00	4.00- 7.00	6.00-12.00	10.50- 12.00
Lennox, 825 Washington	3.25- 6.00	5.00- 6.50	6.00- 8.00	11.00
Majestic, 200 N. 11th	2.25- 3.50	3.00- 4.00	5.00	
Mark Twain, 116 N. 8th	3.00- 3.50	4.50- 5.00	5.00- 5.50	
Mayfair, 806 St. Charles	3.25- 7.00	5.00- 8.00	6.00- 8.00	11.00-up
Melbourne, 3601 Lindell	3.50- 6.00	5.50- 6.50	6.00- 8.50	12.00- 15.50
Statler, 822 Washington	3.50- 6.00	5.25- 8.00	7.25-10.00	16.00- 19.00

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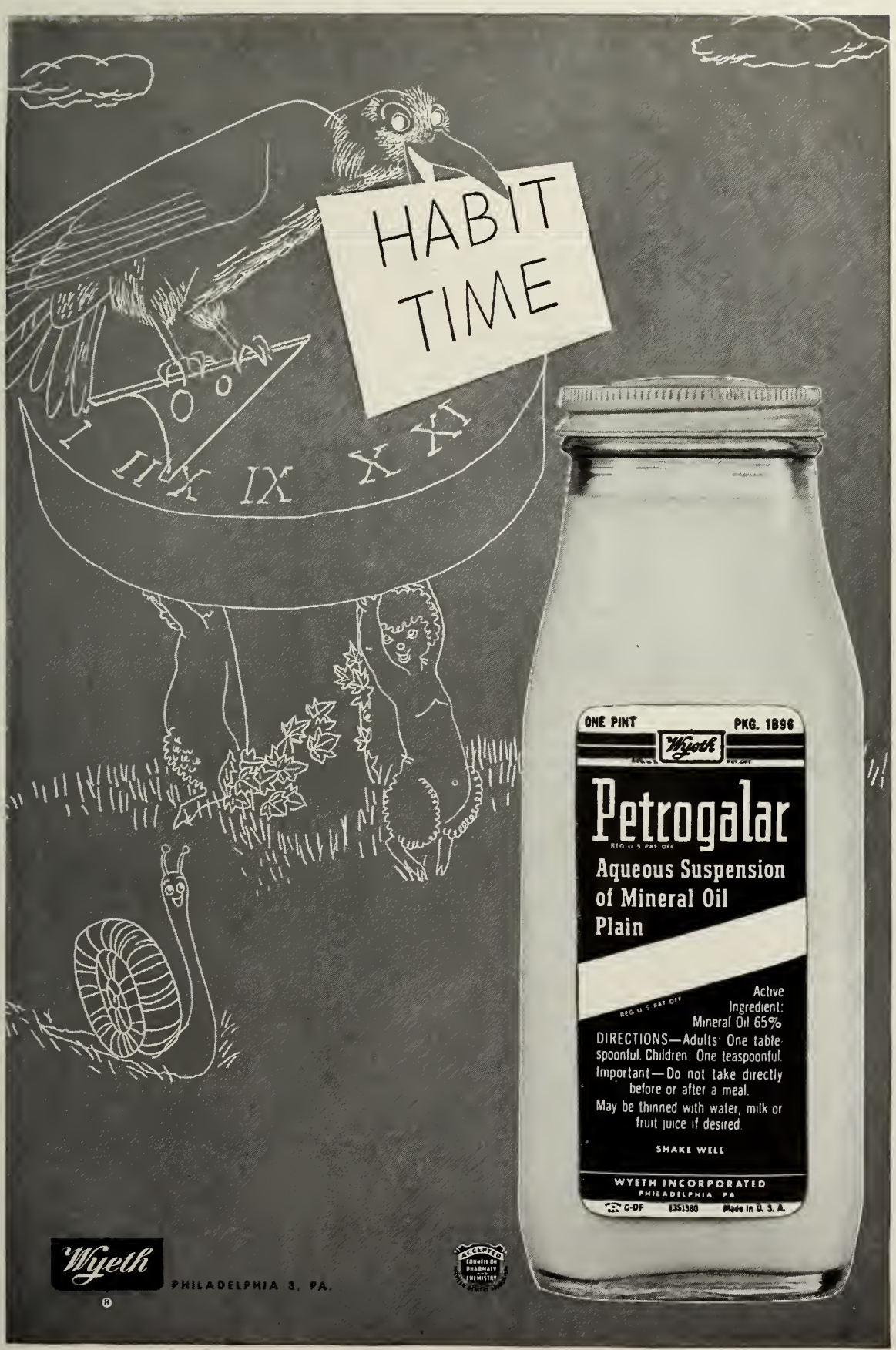
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The remainder of the book has, of course, been checked and revised. The chapter on the Intestinal Tract in Relation to Gynecologic Surgery and the chapter on Anesthesia have been rewritten by their author, Dr. H. S. Brookes.

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Miller, William J., M.D., St. Louis, a graduate of Marion-Sims College of Medicine, 1892; honor member of the St. Louis Medical Society; aged 78; died December 30.

Gunn, William G., M.D., Versailles, a graduate of Barnes Medical College, 1909; member of the Morgan County Medical Society; Fellow of the American Medical Association; aged 63; died January 2.

Schisler, Edwin J., M.D., St. Louis, a graduate of Beaumont Hospital Medical School, 1896; honor member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 73; died January 12.

Bina, Albert F., M.D., St. Louis, a graduate of the National University of Arts and Sciences, 1915; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 64; died January 14.

Andruss, Edward, M.D., Holden, a graduate of the Kansas City Homeopathic Medical College, 1897; member of the Johnson County Medical Society; aged 85; died January 15.

Robnett, Dudley A., M.D., Columbia, a graduate of Johns Hopkins University School of Medicine, 1919; member of the Boone County Medical Society; Fellow of the American Medical Association; aged 53; died January 25.

Ives, George, M.D., St. Louis, a graduate of Johns Hopkins University School of Medicine, 1911; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 65; died February 1.

Goldman, Lawrence E., M.D., St. Louis, a graduate of Washington University School of Medicine, 1928; member of the St. Louis Medical Society; aged 45; died February 2.

Steele, Harol, M.D., St. Louis, a graduate of the National University of Mexico, 1941; member of the St. Louis Medical Society; aged 45; died February 4.

MUSINGS OF THE FIELD SECRETARY

Health problems of the rural child spotlighted the third annual National Conference on Rural Health which was held in Chicago on February 6 and 7. Both lay and professional people appeared on the program. Of the many statements made at this session, some of the more impressive ones were:

Of wives of low income farmers 40 per cent have neglected childbirth injuries; 10 per cent of their children are seriously underweight; 48 per cent have defective tonsils; 65 per cent have decayed teeth.

Only 14 per cent of all American farm mothers have the protection of hospital care when their babies are born. While these figures refer to low income farm people, even in prosperous times more than half of all farmers fall in this category.

Community health councils can best develop the type of cooperation needed for an effective rural health program.

There are more health problems among rural children than among city children—one reason being that there are more of them.

Of all farms, 40 per cent are still without electric power which means that in many sections large numbers of children lack proper light for reading and study.

It has been said that children are safer in the country than in the crowded city; yet the National Safety Council says that farm accidents are among the highest recorded.

Of this countries 140 million people, 40 million live in areas which have no public health services and an additional 95 million live where these services do not meet minimum basic standards, leaving only five million with adequate benefits of modern preventive medicine.

The ratio of children to adults is nearly twice as great on farm as in cities.

Soil conservation is probably the most basic of all health problems. A soil depleted of certain elements, necessary perhaps only in small amounts, will produce neither strong plants nor strong animals. It is estimated that one third of the natural fertility of soil in this country has now been lost.

Preventive medical services are both socially and economically sound. More milk can be made available by eliminating Bangs disease. Increased grain production can be secured by eliminating rats.

More health talks by physicians are needed in the schools as well as more special health courses taught by better trained teachers.

As of February 7, hospital construction plans under public law 725 have been approved in thirty-three states by the U. S. Public Health Service. Within these thirty-three state approved plans, 124 separate hospital construction projects have been approved. Approximately $18,000,000 of federal funds is involved in these 124 projects, the majority of which are in communities of less than 5,000 people. Eight states are financially assisting local hospital construction projects in addition to the federal assistance. The present range of construction costs is from $7,000 to $13,000 per bed.

Packaged medicine amounting to $500,000,000 is being sold per year without prescriptions.

Sixty-nine per cent of all physicians (60 per cent of the general practitioners and 84 per cent of specialists) are located in metropolitan areas as compared to 47 per cent of the child population.

If the health problems of the rural child are to be met adequately, it is essential that the general practitioner of the future receive more pediatric training than has been provided in medical school education and intern year. The current movement toward two year internships, from four to six months of which would be spent in pediatrics, is a long step in the right direction.

The number of white men accepted for military service, per hundred examined, was higher in the rural population than in the urban.

It is futile to use selective service statistics as a measure of health or lack of medical care. Selective service rejection defects such as amputations result from medical care instead of lack of it. Many persons with diabetes were able to be in the draft only because of medical care.

Medical care is but one of the factors which determine the health of a community.

MISSOURI ASSOCIATION FOR NEUROLOGY AND PSYCHIATRY

The annual spring meeting of the Missouri Association for Neurology and Psychiatry will be held Sunday, March 14, at Hotel Jefferson, St. Louis, beginning at 2:00 p. m. with a business meeting. The following scientific program will be presented at 3:00 p. m.

3:00 p. m. Biochemical Research in Psychiatry, Edwin F. Gildea, M.D., St. Louis.

3:30 p. m. An Evaluation of Shock Treatments—Insulin and Electric Shock, Guy F. Witt, M.D., Professor of Neuropsychiatry, Southwestern Medical College, Dallas, Texas.

4:00 p. m. Carotid Arteriography for Intracranial Lesions, Walter D. Abbott, M.D., Chief of Neurosurgical Department, Broadlawns General Hospital, Des Moines, Iowa.

4:30 p. m. Psychiatric Factors in Peptic Ulcers, Frank H. Luten, M.D., Neurologist and Psychiatrist in Chief, Vanderbilt University Hospital, Nashville, Tennessee.

5:00 p. m. Election of Officers. Social Hour.

7:00 p. m. Banquet. Speaker, C. Charles Burlingame, M.D., Psychiatrist-in-Chief, The Institute of Living, Hartford, Connecticut.

All members are invited to attend both the meeting and the banquet. It is requested that reservations for the banquet be made as early as possible with Paul Hines, M.D., 1300 Grand Road, Webster Groves; or G. Wilse Robinson, Jr., M.D., 2625 W. Paseo, Kansas City.

MISSOURI CHAPTER, AMERICAN TRUDEAU SOCIETY

The Missouri Chapter of the American Trudeau Society will convene on Sunday, March 14, at Hotel Statler, St. Louis, beginning at 10:00 a. m. The following program will be presented:

Some Problems in Unsatisfactory Pneumothorax, John Kallish, M.D., Koch.

The Middle Lobe Syndrome, Thomas H. Burford, M.D., St. Louis.

The Reaction of Vaccinated and Unvaccinated Individuals to an Influenza Epidemic, G. O. Broun, M.D., St. Louis.

Sarcoidosis, Henry C. Sweaney, M.D., Municipal Tuberculosis Sanatorium, Chicago.

Beginning at 2:30 p. m. the following program will be given:

Streptomycin, Julius Wilson, M.D., New Orleans.

X-Ray Conference on Streptomycin Treatment of Pulmonary and Nonpulmonary Tuberculosis. General participation.

At 7:00 p. m. a banquet will be held at which the speakers will be James E. Perkins, Managing Director, National Tuberculosis Association; and Esmond R. Long, Director of Research, National Tuberculosis Association, and Executive Secretary, American Trudeau Society, who will speak on "Tuberculosis as a Postwar Problem in Europe."

All members are invited to attend the session.

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for March and April, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

March 3: Miscellaneous.
March 5: Gynecologic and Genitourinary.
March 10: Skin.
March 12: Breast.
March 17: Gastrointestinal.
March 19: Cervix.
March 24: Skin.
March 26: Head and Neck.
March 31: Miscellaneous.
April 2: Gynecologic and Genitourinary.
April 7: Miscellaneous.
April 9: Breast.
April 14: Skin.
April 16: Cervix.
April 21: Gastrointestinal.
April 23: Head and Neck.
April 28: Skin.
April 30: Miscellaneous.

SOCIETY PROCEEDINGS

FIRST COUNCILOR DISTRICT

H. E. PETERSEN, ST. JOSEPH, COUNCILOR

Grundy-Daviess County Medical Society

Braving below zero weather, seventeen physicians attended a joint dinner meeting of the Caldwell-Livingston, Carroll, Grundy-Daviess, Harrison, Linn, Mercer and Ray county medical societies at Chillicothe on January 22. The meeting was sponsored by the Grundy-Daviess County Medical Society.

David V. LeMone, M.D., Columbia, and Jack Modlin, M.D., Columbia, discussed "The Scout Film in X-Ray Diagnosis."

The severity of the weather failed to curb the enthusiasm of those present in their reception of this excellent program.

Another meeting of the group is scheduled for April following the March Annual Session of the Association.

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

North Central Counties Medical Society

The North Central Counties Medical Society met at the office of Dr. S. L. Freeman in Kirksville on February 5 at 7:30 p. m.

The meeting was called to order by Dr. P. V. Hart, Coatsville, and the minutes of the last meeting were read and approved.

Applications for membership of Ralf Hanks, M.D., and John Ben Jones, M.D., Kirksville, were read and, upon approval by the board of censors, both were elected to membership.

The request of A. F. Miller, M.D., for a transfer to the Knox County Medical Society, Knoxville, Tennessee, was granted.

The next meeting will be held with Dr. J. S. Montgomery at Milan on April 7.

J. S. Gashwiler, M.D., Secretary.

FOURTH COUNCILOR DISTRICT

OTTO W. KOCH, CLAYTON, COUNCILOR

St. Louis County Medical Society

The St. Louis County Medical Society met on January 28 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

The president introduced the chairmen of committees for 1948.

In accordance with a resolution passed last year, a minute of silence was observed in memory of the following members of the society who died during the year: R. D. Furlong, M.D.; E. T. Gallagher, M.D.; Thomas J. Kemp, M.D., and F. P. Knabb, M.D.

INSEPARABLY RELATED

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Cameron, A. T.: Recent Advances in Endocrinology, ed. 5, Philadelphia, The Blakiston Company, 1945, p. 1.

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Dr. Schattyn reported that the membership of the society on January 1 was 1 honor member, 264 active members and 21 corresponding members. This number will give an additional delegate to the Missouri State Medical Association.

Dr. Roland Steubner moved that the society go on record as (1) reaffirming its acceptance of the principles of medical ethics of the American Medical Association prohibiting rebates or fee splitting practices of any type, and (2) indicating willingness of the society's committee on medical ethics to cooperate with any investigation by the Better Business Bureau of St. Louis of such alleged practices by members of the society. The motion was passed.

In the discussion of the motion it was brought out that the recent editorial in the St. Louis *Post-Dispatch* relating to optical rebates was considered too blanket an indictment of the medical profession in general and of the St. Louis area profession in particular.

Merl J. Carson, M.D., St. Louis, spoke on "Newer Concepts in Pediatrics" giving a thorough presentation of congenital cardiovascular defects and their treatment. This was discussed by Drs. Guy Magness, Sigmund Tashma and Simon Levey.

Robert C. Kingsland, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central Counties Medical Society

The South Central Counties Medical Society held a dinner meeting at the El Patio Hotel, Cabool, at 7:00 p. m. on January 16. The following members and guests were present: R. W. Denney, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, Jr., M.D., Cabool; J. R. Womack, M.D., Houston; Leslie Randall, M.D., Licking; C. F. Callihan, M.D., Willow Springs; E. C. Bohrer, M.D., and Rollin H. Smith, M.D., West Plains; Harry D. Silsby, M.D., and John P. Ferguson, M.D., Springfield; T. J. Burns, M.D., Houston.

T. J. Burns, M.D., Houston, was voted a member of the society.

Dr. Silsby spoke on "Treatment of Congestive Heart Failure," stressing the importance of ridding the tissues of salt and other sodium compounds and eliminating them from the diet and the free use of milk and other liquids.

Dr. Ferguson spoke on "The Management of Breech Presentation."

A vote of thanks was given the speakers.

The meeting adjourned to meet in Mountain Grove on February 20.

A. C. Ames, M.D., Secretary.

TENTH COUNCILOR DISTRICT

FRANK W. HALL, CAPE GIRARDEAU, COUNCILOR

Forty-six physicians attended a dinner meeting of the societies comprising the Tenth Councilor District at the State Hospital, Farmington, on January 15. The meeting was sponsored by the St. Francois-Iron-Madison-Washington-Reynolds County Medical Society.

Bruce D. Kenamore, M.D., St. Louis, gave an interesting and informative talk on "Recent Advances in the Management of Peptic Ulcer." A general discussion followed.

Frank W. Hall, M.D., Cape Girardeau, Councilor of the Tenth Councilor District, discussed briefly the activities being carried out by the Association.

T. R. O'Brien, Executive Secretary of the Association, spoke on the Annual Session of the Association to be held March 14 to 17 at the Jefferson Hotel, St. Louis.

Scott County Medical Society

The Scott County Medical Society met at the Sikeston General Hospital on December 17 at 7:30 p. m. with the following members present: W. O. Finney, M.D., Chaffee; E. D. Urban, M.D., H. B. Throgmorton, M.D., A. P. Sargent, M.D., T. C. McClure, M.D., and A. D. Martin, M.D., Sikeston.

The following officers of the society were elected to serve in 1948: President, A. P. Sargent, M.D.; vice president, E. J. Nienstedt, M.D.; secretary, E. D. Urban, M.D.; censors, Jesse A. Cline, M.D., and George A. Sample, M.D.; delegate, W. O. Finney, M.D.; alternate, A. D. Martin, M.D.

The next meeting of the society will be held in Sikeston on the last Wednesday in January.

A. D. Martin, M.D., Secretary.

ORGANIZATION ACTIVITIES

MISSOURI STATE MEDICAL ASSOCIATION

90th Annual Session, Jefferson Hotel, St. Louis

The Ninetieth Annual Session of the Association convenes at the Jefferson Hotel, St. Louis, Sunday, Monday, Tuesday and Wednesday, March 14, 15, 16, 17, 1948.

TIME AND PLACE OF MEETINGS

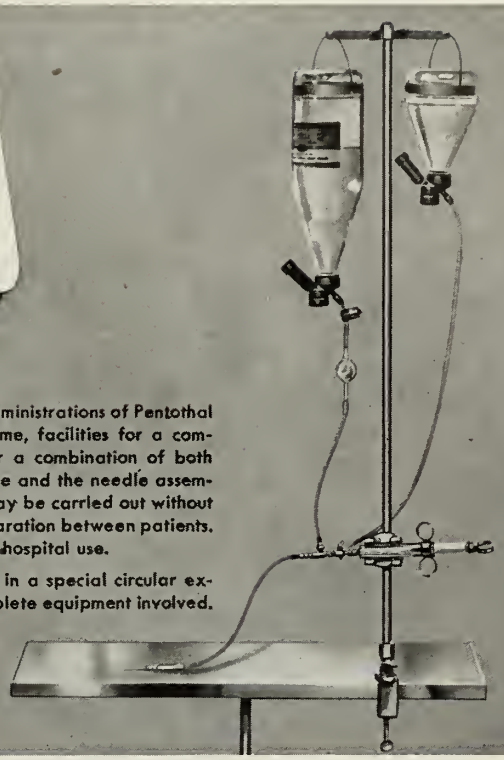
Sunday, March 14

12:30 p. m. Registration. Mezzanine Floor, Jefferson Hotel.
2:00 p. m. House of Delegates. Crystal Room, Jefferson Hotel.
6:00 p. m. Dinner for Presidents and Secretaries of County Medical Societies. Room 1, Jefferson Hotel.

Monday, March 15

8:00 a. m. Registration. Mezzanine Floor, Jefferson Hotel.
9:30 a. m. Scientific Session. Gold Room, Jefferson Hotel.
10:30 a. m. Intermission to View Exhibits. Mezzanine Floor, Jefferson Hotel.
11:00 a. m. Scientific Session. Gold Room, Jefferson Hotel.
1:30 p. m. Scientific Session. Gold Room, Jefferson Hotel.
4:00 p. m. Intermission to View Exhibits. Mezzanine Floor, Jefferson Hotel.
4:30 p. m. House of Delegates. Crystal Room, Jefferson Hotel.
7:30 p. m. Annual Banquet in Honor of Past Presidents. Gold Room, Jefferson Hotel.

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Tuesday, March 16

8:00 a. m. Registration. Mezzanine Floor, Jefferson Hotel.
9:00 a. m. Scientific Session. Gold Room, Jefferson Hotel.
10:25 a. m. Intermission to View Exhibits. Mezzanine Floor, Jefferson Hotel.
10:55 a. m. Scientific Session. Gold Room, Jefferson Hotel.
12:00 noon. Luncheon. University of Missouri Medical Association. Jefferson Hotel.
2:00 p. m. Scientific Session. Gold Room, Jefferson Hotel.
3:15 p. m. Intermission to View Exhibits. Mezzanine Floor, Jefferson Hotel.
3:45 p. m. Scientific Session. Gold Room, Jefferson Hotel.
8:30 p. m. Entertainment. St. Louis Medical Society, Host.

Wednesday, March 17

8:30 a. m. Registration. Mezzanine Floor, Jefferson Hotel.
9:30 a. m. Scientific Session. Gold Room, Jefferson Hotel.
10:20 a. m. Intermission to View Exhibits. Mezzanine Floor, Jefferson Hotel.
10:50 a. m. Scientific Session. Gold Room, Jefferson Hotel.
2:00 p. m. House of Delegates. Crystal Room, Jefferson Hotel.

SCIENTIFIC PROGRAM OF GENERAL MEETINGS

Monday, March 15, 1948, 9:30 a. m.—Gold Room, Jefferson Hotel

E. Lee Dorsett, M.D., St. Louis, Presiding

9:30 a. m. The Overtreatment of Eclampsia, William F. Mengert, M.D., Dallas, Texas.

Since the introduction of anesthesia and aseptic surgery, physicians have learned by sad experience that an eclamptic convulsion presents contraindication to forcible, or even immediate, delivery. From 1918 to the present represents the therapeutic era of hypertonic solutions. Following five deaths from pulmonary edema, during the space of eight months in 1945, it became evident that toxemic, and especially eclamptic, patients literally can be "drowned" by too profuse and too rapid intravenous injection of isotonic and especially hypertonic fluids. During the last two years twenty-one eclamptic patients, eight of them severe by Eden's criteria, were treated by a policy of "scientific" neglect. All of them recovered. A simple treatment, currently employed at the Parkland Hospital, will be outlined.

10:00 a. m. Avoidable and Unavoidable Hemorrhage in Obstetrics, Hugh G. Hamilton, M.D., Kansas City.
10:20 a. m. Discussion:
Howard B. Goodrich, M.D., Hannibal.
Joseph L. Johnston, M.D., Springfield.

Intermission to View Exhibits—10:30 to 11:00 a. m.

11:00 a. m. Induction of Labor, Ora James Gibson, M.D., Cape Girardeau.

Definition, methods employed, indications and contraindications and complications will be discussed.

11:20 a. m. Discussion:
John M. Singleton, M.D., Kansas City.
Leo J. Hartnett, M.D., St. Louis.

11:30 a. m. The Rh Factor, Matthew W. Weis, M.D., St. Louis.

There are many reports in the literature concerning the Rh factor in its relation to the various branches of medicine. A personal study was undertaken to evaluate its importance in relation to obstetrics, pediatrics and, incidently, to blood transfusions. All cases studied were under direct supervision. The findings led to conclusions which seem to be practical and which may serve as a guide for the management of cases in which the Rh factor is significant.

11:50 a. m. Discussion:
Peter G. Danis, M.D., St. Louis.
Hollis Allen, M.D., St. Louis.

Intermission for Lunch and to View Exhibits—12:00 noon to 1:30 p. m.

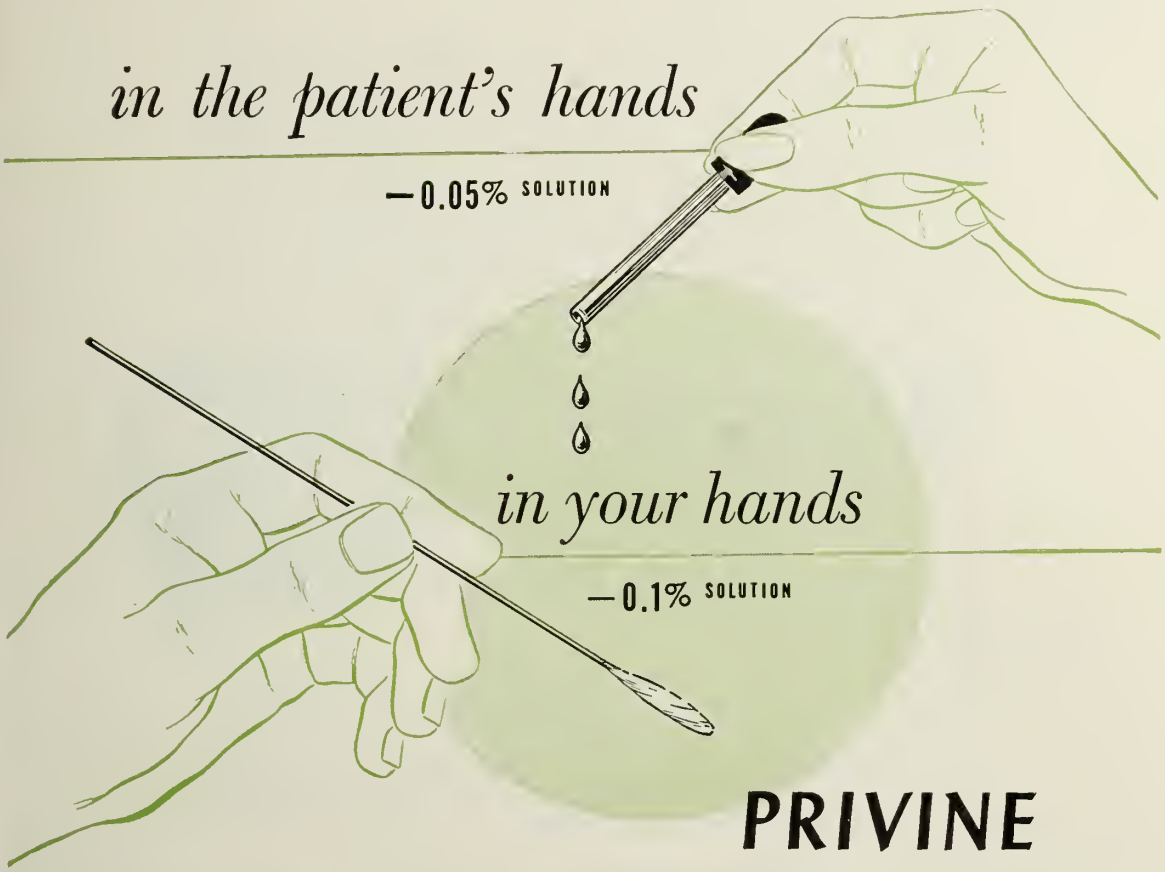
Monday, March 15, 1948, 1:30 p. m.—Gold Room, Jefferson Hotel

Donald M. Dowell, M.D., Chillicothe, Presiding

1:30 p. m. Common Fractures, E. C. Funsch, M.D., St. Louis.

Fractures of the hand, with complicating soft tissue injury and methods of treatment that gave the best functional recovery.

1:50 p. m. Discussion.



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1:55 p. m. Results of Fifteen Years of Tuberculosis Control in Rural Minnesota, Lewis S. Jordan, M.D., Granite Falls, Minnesota.

The tuberculosis control work as planned in 1930 had eight main points: (1) To discover the infected children so they could be observed throughout their school career and into young adulthood; (2) to trace wherever possible the source of infection for each child found to be a tuberculin reactor; (3) to eliminate the infective factor by breaking the contact with the child, preferably by institutionalizing the persons with positive sputum, or otherwise controlling their disease; (4) to examine all adult contacts of the children in the schools; (5) to institute an educational program including talks, movies and literature to reach all lay groups and civic organizations; (6) to institute a follow-up program, checking each tuberculin reactor by roentgen ray films of the chest at least once each two years, or more often if indicated; (7) to obtain 100 per cent cooperation of the state and local medical societies, and (8) to aid the veterinarians program of eradication of tuberculosis among animals. When this work was begun in 1930 an average of 13.9 per cent of all school children reacted to tuberculin. At the last test, the percentage was 2.7 per cent. The American School Health Association became interested and prepared standards for certifying schools. In January 1946 work was begun in an attempt to accredit as many schools as possible. If the sources of infection can be eliminated and those few whose tuberculin test shows that they have been infected, roentgen raying them annually or more often if there are any suspicious shadows, there is every reason to believe tuberculosis can be eradicated in areas such as the one covered within the life span of the coming generation.

2:25 p. m. Discussion.

2:30 p. m. Coronary Heart Disease, A. M. Estes, M.D., Jackson.

A brief outline of coronary heart disease is presented. Arteriosclerosis of the coronary blood vessels is given as the main cause. The symptom of pain in anginal syndrome, coronary thrombosis and myocardial infarction is described and a differential diagnosis given. A plan of management and drugs of greatest benefit and most commonly used are mentioned. Digitalis and quinidine should not be used simultaneously.

2:50 p. m. Discussion.

2:55 p. m. Headache: Clinical Varieties and Therapeutic Suggestions, Bayard T. Horton, M.D., Rochester, Minnesota.

A general discussion of headache mechanisms and the differential diagnosis of the various types of headaches and head pains will be discussed. The lecture will be supplemented by technicolored motion pictures, demonstrating the clinical features of several types of headache. Specific forms of therapy will be outlined and discussed.

3:25 p. m. Discussion.

3:30 p. m. Allergy, Herbert J. Rinkel, M.D., Kansas City.

There still remains a number of diagnostic and therapeutic problems whose nature is not well understood despite the general increase of knowledge concerning allergic diseases. It is the purpose of the paper to present a discussion of these factors which particularly concern the general practitioner. Foremost among these problems is preventive allergy in the allergic child which all too frequently has been neglected, particularly in the young patient. Another important problem is the patient with chronic colds and chronic fatigue. In the study of these two syndromes consideration has been given to many factors but it is seldom true that the allergic component has been considered, let alone evaluated. In the practice of all physicians, the differential diagnosis of abdominal symptoms in terms of allergic or nonallergic etiology is of great import. There is, as yet, an incomplete knowledge of the efficacy of skin testing. These often are grouped under one heading, whereas they should be considered as two separate phases—foods and inhalants—since their accuracy is different in these two groups. Other problems are the effect of climatic changes and drug therapy, particularly in reference to etiology, and, finally, the contribution which must be made, if it is made at all, by the general practitioner in conjunction with the allergist in the successful management of the patient.

3:55 p. m. Discussion.

Intermission to View Exhibits—4:00 to 4:30 p. m.

4:30 p. m. House of Delegates.



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7:30 p. m.—Gold Room

Morris B. Simpson, M.D., Kansas City, President, Presiding

Address of Welcome, Llewellyn Sale, M.D., St. Louis, President, St. Louis Medical Society.
Introduction of Guests.
Presentation of Past Presidents.
Presentation of Past President Key.
Introduction of Winner of Woman's Auxiliary Essay Contest.
Presentation of Lay Award.
Address of the President.
Address of the President-Elect.
Installation of the President-Elect.
Medicine's New Frontiers, Edward L. Bortz, M.D., Philadelphia, President, American Medical Association.

Tuesday, March 16, 1948, 9:00 a. m.—Gold Room, Jefferson Hotel

S. M. Bailey, M.D., Malden, Presiding

9:00 a. m. Office Gynecology, Joseph A. Hardy, M.D., St. Louis.
9:20 a. m. Discussion.
9:25 a. m. Common Proctologic Conditions, Tom E. Smith, M.D., Dallas.

The common proctologic conditions of hemorroids, fissures and ulcers, abscesses and fistulas, pruritus, polyps and adenocarcinoma are discussed both from diagnostic and treatment standpoints with emphasis on treatment. Since palpation of the anorectum has been made a part of complete physical examinations by general practitioners, an appeal is made to add sigmoidscopy and the use of the endoscope to the routine.

9:55 p. m. Discussion.
10:00 a. m. Hypertension, H. O. Loyd, M.D., Jefferson City.
10:20 a. m. Discussion.

Intermission to View Exhibits—10:25 to 10:55 a. m.

O. T. Blanke, M.D., Joplin, Presiding

10:55 a. m. Sprains and Strains: Differential Diagnosis, F. G. Pipkin, M.D., Kansas City.
11:15 a. m. Discussion.
11:20 a. m. Treatment of Diabetes Mellitus With Special Reference to the Untoward Effects of Persistent Hyperglycemia, Henry T. Ricketts, M.D., Chicago.

It frequently is stated that persistent hyperglycemia in and of itself is not injurious. This claim is of necessity advanced by the advocates of the free diet, under which patients are allowed to eat much as they please and are given only enough insulin to avoid dehydration and ketosis. It is important to recognize that it may take from fifteen to twenty years for patients to show the harmful effects of improper treatment and that no group of patients maintained on a free diet has been followed carefully for this length of time. Another ten years must elapse before the results of such diets can be evaluated. Meanwhile it is pertinent to call attention to certain facts which point clearly to the possibility that at least under some conditions hyperglycemia can be harmful. The most convincing evidence has been obtained in animals. Discussion of experimental work is presented. Diet, tests necessary in management and treatment are discussed.

Sponsored by the St. Louis Clinical Diabetes Society.

11:50 a. m. Discussion.

Intermission for Lunch and to View Exhibits—12:00 noon to 2:00 p. m.

Tuesday, March 16, 1948, 2:00 p. m.—Gold Room, Jefferson Hotel

Symposium on Pediatrics

2:00 p. m. Garrett Hogg, M.D., Cabool, Moderator.
Panel: H. E. Petersen, M.D., St. Joseph.
Caldwell K. Hamilton, M.D., St. Louis.
C. T. Herbert, M.D., Cape Girardeau.
Jackson Eto, M.D., St. Louis.

Intermission to View Exhibits—3:15 to 3:45 p. m.

3:45 p. m. William J. Shaw, M.D., Fayette, Moderator.
Panel: George V. Herrman, M.D., Kansas City.
Joseph C. Jaudon, M.D., St. Louis.
D. B. Landau, M.D., Hannibal.
Eugene J. Schwartz, M.D., Springfield.

5:00 p. m. Adjournment.

Wednesday, March 17, 1948, 9:30 a. m.—Gold Room, Jefferson Hotel

Morris B. Simpson, M.D., Kansas City, Presiding

Symposium on the Acute Abdomen

9:30 a. m. Signs and Symptoms of the Acute Abdomen, Charles G. Johnston, M.D., Detroit.

The problem of the acute abdomen is a complex one. A careful history and physical examination with careful evaluation is essential for an early accurate diagnosis which is so important for adequate therapy. Differentiation between surgical and nonsurgical lesions deserves careful consideration since surgical interference in the latter is likely to be attended with serious consequences. In the acute surgical abdomen, accurate localization of the difficulty is necessary since the trauma of the surgical procedure can be minimized if exploration is confined to the area involved.

10:00 a. m. Medical Aspects, Alphonse McMahon, M.D., St. Louis.

Intermission to View Exhibits—10:20 to 10:50 a. m.

10:50 a. m. Surgical Aspects, Frank W. Hall, M.D., Cape Girardeau.

The acute surgical abdomen is recognized as a clinical syndrome covering many acute conditions arising therein. In no field of surgery is the relationship between the mortality and the time elapsing before operation so close as here. In general, the fate of many acute surgical emergencies is decided during the first twenty-four hours. Since medical and surgical conditions during the first few hours may present identical clinical pictures, there is a grave responsibility placed upon the physician or surgeon who sees these patients during that time. The cardinal principle in handling these patients is early diagnosis and the institution of appropriate treatment. Frequently, one cannot arrive at the correct diagnosis within the first few hours, but it is essential to make a decision whether the situation is one that is more safely operated upon than treated expectantly until the diagnosis is obvious. This discussion is limited to the surgical aspects of the more common conditions encountered. The most common causes for surgical interference having as a common denominator acute abdominal discomfort are (1) traumatic injuries, (2) acute appendicitis, (3) acute cholecystitis, (4) gastric and duodenal lesions, (5) intestinal obstruction, (6) extrauterine pregnancy, (7) torsion of ovary, (8) acute diverticulitis, (9) mesenteric thrombosis, (10) intussusception, (11) pyloric stenosis, (12) volvulus. The following are fairly common causes of abdominal discomfort but do not require emergency surgery. Some of them will require operation at a later date or at a time of election. In other words, if one can be sure of the diagnosis of these conditions one can wait developments: (1) acute pancreatitis, (2) acute mesenteric lymphadenitis, (3) ruptured ovarian follicle, (4) regional ileitis, (5) acute salpingitis, (6) cholelithiasis, (7) ureteral calculus.

11:10 a.m. Obstetric and Gynecologic Aspects, Kenneth E. Cox, M.D., Kansas City.

Of greatest service to the practitioner in the management of the acute abdomen is his ability to take an accurate and detailed history. In the field of gynecology and obstetrics points to be covered specifically in each case are: (1) history of previous similar attacks, (2) relationship of present illness to menses, (3) recent menstrual irregularities, (4) possibility of early pregnancy, and (5) relationship of present illness to disturbances of bowel and urinary function. Such a detailed history oriented with respect to the age group of the patient and the chronology of symptoms usually will present a syndrome of specific nature that can be confirmed by physical examination of the pelvic organs and appropriate laboratory tests. An outline of the principal points in differential diagnosis between inflammation, mechanical accident and hemorrhage involving the various organs within the female pelvis is presented with a guide to the proper interpretation of laboratory tests and the use of such auxiliary procedures as the novocain test, cul-de-sac puncture and culdoscopy.

11:30 a. m. Supportive Procedures, Charles H. Johnston, M.D., Detroit.

11:45 a. m. Discussion:
Willard Bartlett, Jr., M.D., St. Louis.



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Intermission for Lunch and to View Exhibits—12:00 noon to 2:00 p. m.
House of Delegates—2:00 p. m.

SCIENTIFIC EXHIBITS

Mezzanine Floor, Jefferson Hotel

Differential Section of Fifth Cranial Nerve for Trigeminal Neuralgia, R. Dean Woolsey, M.D., St. Louis.

New Type of Radium Applicator; Improved Methods of Irradiation; Carcinoma of the Cervix Uteri, Edwin C. Ernst, M.D., St. Louis.

Surgical Pathology of the Intestinal Tract, J. W. Thompson, M.D., and E. L. Miloslovich, M.D., St. Louis.

Myasthenia Gravis, Andrew B. Jones, M.D., and Robert J. Mueller, M.D., St. Louis.

Aortography, A. E. Vitt, M.D., W. F. Melick, M.D., Leo J. Hartnett, M.D., St. Louis.

Unipolar Electrogram, Julius Jensen, M.D., and John Sutton, M.D., St. Louis.

Cerebral Palsy Problem in Missouri, Robert E. Bruner, M.D., St. Louis.

Minimum Water and Salt Requirement of the Surgical Patient, Robert Elman, M.D., and Charles A. Ross, M.D., St. Louis..

Application of Psysiologic and Anatomic Principles in Abdominal Surgery, Willard Bartlett, M.D., St. Louis.

Neck Dissections for Metastatic Carcinoma, Frank McDowell, M.D., and James Barrett Brown, M.D., St. Louis.

A Test for Pancreatic Insufficiency, Raymond O. Muether, M.D., and William A. Knight, M.D., St. Louis.

HOUSE OF DELEGATES

First Meeting—Sunday, March 14, 1948—2:00 p. m.

Crystal Room, Jefferson Hotel

Order of Business

Call to Order by the Speaker of the House.
Invocation.
Address of Welcome.
Preliminary Report of the Committee on Credentials.
Roll Call.
Report of the General Committee on Arrangements, J. W. Thompson, M.D., St. Louis.
Report of the Local Committee on Arrangements, Llewellyn Sale, M.D., St. Louis.
Reading of Minutes of Previous Meeting. (Published in July 1947 Journal.)
Speaker's Instructions and Appointment of Reference Committees:
- Amendments to Constitution and By-Laws.
- Resolutions.
- Miscellaneous Affairs.
- Medical Education and Public Welfare.

Reading of President's Message and Recommendations, Morris B. Simpson, M.D., Kansas City.
Report of the Secretary, W. A. Bloom, M.D., Fayette.
Report of the Executive Secretary, T. R. O'Brien, St. Louis.
Report of the Treasurer, C. E. Hyndman, M.D., St. Louis.
Report of Standing and Special Committees:
- Scientific Work: Raymond O. Muether, M.D., St. Louis, Chairman.
- Postgraduate Course: Raymond O. Muether, M.D., St. Louis, Chairman.
- Publication: G. V. Stryker, M.D., St. Louis, Chairman.
- Public Policy and Public Relations: Robert Mueller, M.D., St. Louis, Chairman.
- Defense: C. E. Hyndman, M.D., St. Louis, Chairman.
- Medical Education and Hospitals: Dudley S. Conley, M.D., Columbia, Chairman.
- Cancer: E. C. Ernst, M.D., St. Louis, Chairman.
- Medical Economics: Carl F. Vohs, M.D., St. Louis, Chairman.
- Mental Health: E. F. Hoctor, M.D., Farmington, Chairman.
- Maternal Welfare: E. Lee Dorsett, M.D., St. Louis, Chairman.
- Infant Care: O. F. Bradford, M.D., Columbia, Chairman.
- Health and Public Instruction: A. W. McAlester, III, M.D., Kansas City, Chairman.
- Constitution and By-Laws: Joseph C. Peden, M.D., St. Louis, Chairman.
- Fractures: Daniel L. Yancey, M.D., Springfield, Chairman.

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Physical Medicine: F. H. Ewerhardt, M.D., St. Louis, Chairman.
Tuberculosis: E. E. Glenn, M.D., Springfield, Chairman.
Study of Cardiac Diseases: A. Graham Asher, M.D., Kansas City, Chairman.
Rural Medical Service: R. W. Kennedy, M.D., Marshall, Chairman.
Report of the Council, J. W. Thompson, M.D., St. Louis, Chairman.
Appointment of Committee on Nominations.
Unfinished Business.

Recessed Session—March 15, 1948—4:30 p. m.
Crystal Room, Jefferson Hotel

Supplementary Report of Committee on Credentials.
Report of Reference Committee:
Amendments to Constitution and By-Laws.
Resolutions.
Miscellaneous Affairs.
Medical Education and Public Welfare.
Report of the Council.
New Business.
Selection of Place of Next Meeting.

Second Meeting—Wednesday, March 17, 1948—2:00 p. m.
Crystal Room, Jefferson Hotel

Report of Committee on Credentials.
Roll Call.
Reading of Minutes.
Election of Officers:
Election of President-Elect.
Report of Committee on Nominations.
Report of the Election of Councilors.
Installation of the President.
Nominations for Standing Committees by President and Confirmation by the House of Delegates.
Unfinished Business. (Report of Reference Committees and Council.)

BOOK REVIEWS

Effective Living. By C. E. Turner, A.M., Ed.M., Sc.D., Dr.P.H., Professor of Public Health, Massachusetts Institute of Technology; Formerly Associate Professor of Hygiene, Tufts Medical and Dental Schools; Formerly Director of Health Education Studies, Malden, Massachusetts; Chairman, Health Section, World Federation of Education Associations and Elizabeth McHose, B.S., M.A., Director of Physical Education for Girls and Chairman of the Health Council, Senior High School, Reading, Pennsylvania. With 164 Illustrations. Second Edition. St. Louis: C. V. Mosby Company. 1945. Price $2.00.

This well written book is intended to be used as a text in the formal teaching of health in high schools. As the title suggests, consideration is given the various factors which enter into the optimal development and adaptation of the individual. The material is arranged under three general sub-headings: Effective living for the individual; in the home and in the community. The factual matter is derived from many fields. It is up-to-date, concise and the material well chosen. The authors feel that the health of the student is the joint responsibility of every teacher, and "Appendix B" suggests a practical manner in which emphasis on health and related subject matter in other courses may be correlated with the work of the formal health course. The book contains adequate references and secondary education's usual super-abundance of "self checkings," "self ratings" and "problems and activities" at the end of each unit. On the whole it is an excellent text. M. Mc.

Cardiology, A Primer of. By George E. Burch, M.D., Associate Professor of Medicine, Tulane University School of Medicine; Senior Visiting Physician, Charity Hospital; Consultant in Cardiovascular Disease, Ochsner Clinic; Visiting Physician, Touro Infirmary, New Orleans; and Paul Reaser, M.D., Instructor in Medicine, Tulane University School of Medicine; Assistant Visiting Physician, Charity Hospital, New Orleans. With 203 Illustrations. Philadelphia: Lea & Febiger. 1947. Price $4.50.

Sir James Mackenzie, in "The Beloved Physician," stressed the evaluation of the heart in terms of what it could do. Instruments, including the stethescope, were secondary tools compared to simple exercise tests. One can but wonder how he would accept this "Primer" of cardiology.

This well written book discusses heart disease in terms anatomy and physiology. Heart sounds, all of the ordinary ones, and even those that can be heard only by the professor of medicine himself, are analyzed in terms of the simultaneous phonogram, electrocardiogram, ventricular pressure, and the venous and arterial pulses. This indeed seems to be the scientific method, and certainly is necessary to the proper understanding and progress of cardiology.

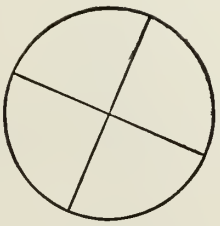
I was most impressed by the diagrams showing the superior mechanical advantage of the three leaf type of heart valve, and by the discussion of the underlying mechanisms in the production of edema.

This thought-provoking book is highly recommended to students and especially to practicing physicians who are interested in an up-to-date look at cardiology.

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[1]Harris, S. C.; Ivy, A. C., and Searle, L. M.: THE MECHANISM OF AMPHETAMINE-INDUCED LOSS OF WEIGHT: A Consideration of the Theory of Hunger and Appetite, J.A.M.A. 134:1468 (Aug. 23) 1947.

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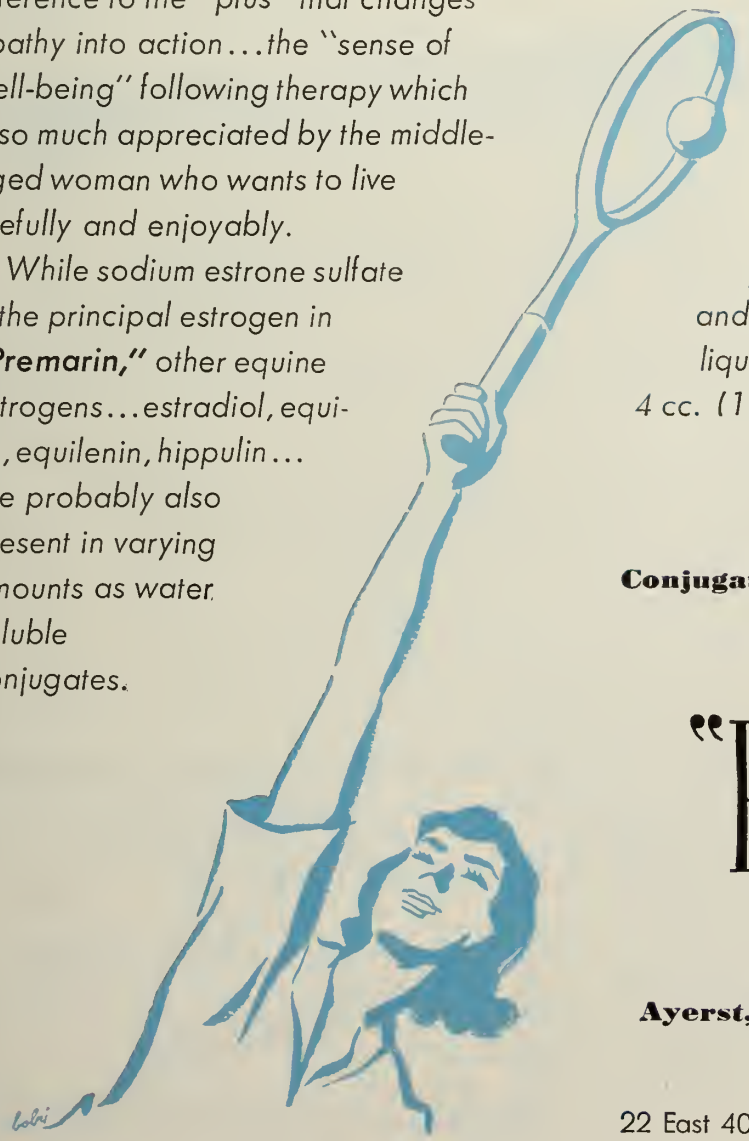
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Nodaway-Atchison-Gentry-Worth	Emmett B. Settle, Rock Port	Clifton M. Waugh, Tarkio
Nodaway-Atchison-Gentry-Worth	Leo F. Wallace, Stanberry	Samuel E. Simpson, Stanberry
Nodaway-Atchison-Gentry-Worth	Frank B. Matteson, Grant City	Pren J. Ross, Grant City
North Central—		
Adair	J. S. Gashwiler, Novinger	S. L. Freeman, Kirksville
Schuyler	Ida May Nulton, Lancaster	H. E. Grewig, Downing
Knox	Frank E. Luman Edina	
Sullivan	J. S. Montgomery, Milan	W. Herington, Green City
Putnam	P. V. Hart, Coatesville	J. H. Holman, Unionville
Ozarks	Kenneth Glover, Mt. Vernon	A. J. C. McCallum, Aurora
Pemiscot	W. R. Limbaugh, Hayti	J. B. Luten, Caruthersville
Perry	Jerome Bredall, Perryville	O. A. Carron, Perryville
Pettis	A. J. Campbell, Sedalia	W. A. Beckemeyer, Sedalia
Phelps-Crawford-Dent-Pulaski	R. E. Breuer, Newburg	G. V. Everist, Rolla
Phelps-Crawford-Dent-Pulaski	W. F. Irwin, Leasburg	R. C. Parker, Steelville
Phelps-Crawford-Dent-		

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Consistently Zero!



A CLINICAL ADVANTAGE IN FEEDING THE PREMATURE

Because Similac, like breast milk, has a *consistently zero* curd tension, it can be fed in a concentrated high-caloric formula without fear of increased curd tension and lengthened digestive period. Hence, premature infants unable to take a normal volume of food may safely be fed a concentrated Similac formula supplying as much as *double* the caloric value (per ounce) of the normal dilution. The use of a concentrated formula often avoids serious loss of weight and inanition in the premature infant, and permits a more rapid return to normal weight gain.

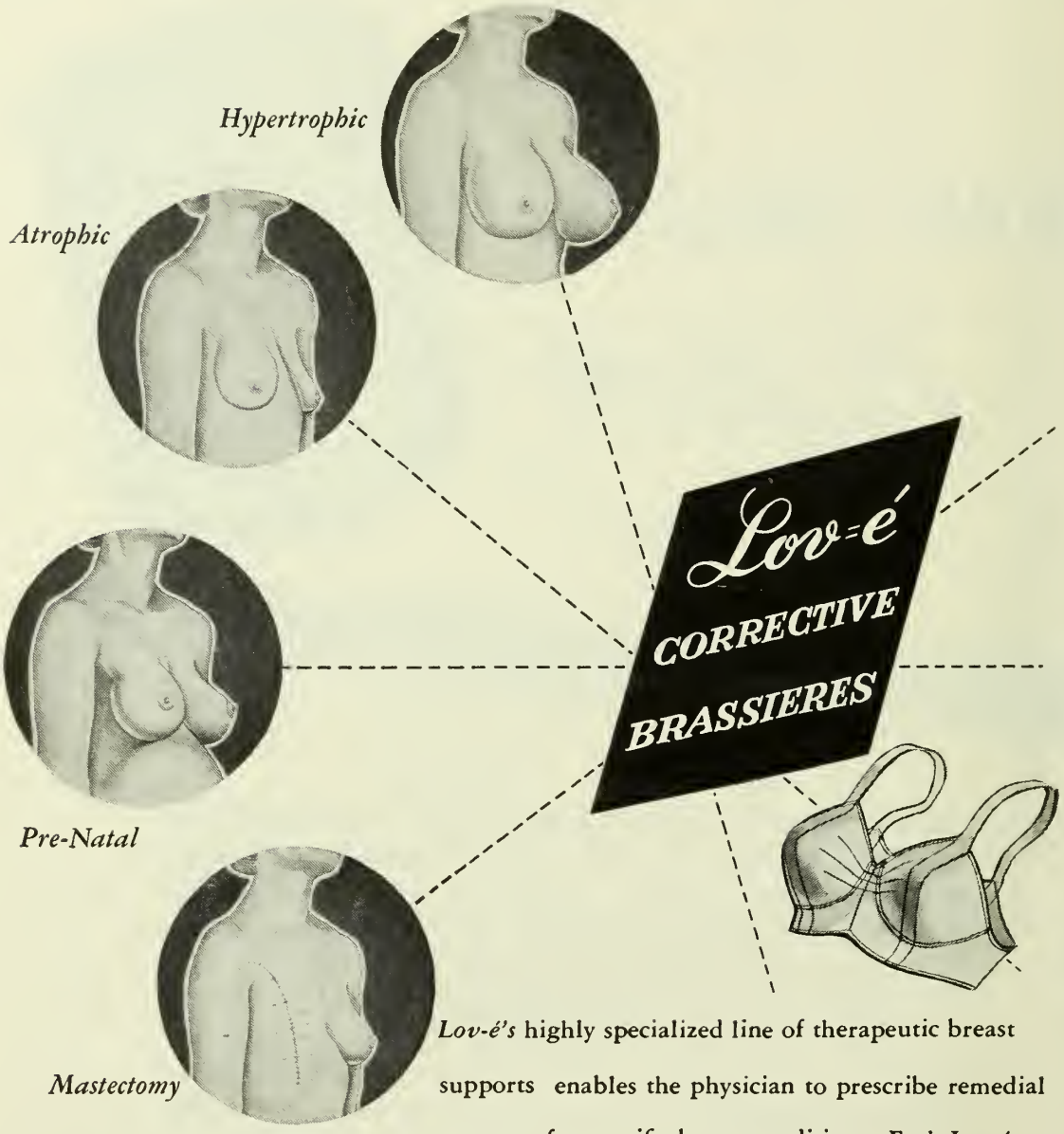
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A powdered, modified milk product, especially prepared for infant feeding, made from tuberculin tested cow's milk (casein modified) from which part of the butter fat has been removed and to which has been added lactose, cocoanut oil, cocoa butter, corn oil, and olive oil. Each quart of normal dilution Similac contains approximately 400 U.S.P. units of Vitamin D and 2500 U.S.P. units of Vitamin A as a result of the addition of fish liver oil concentrate.



Lov-é's highly specialized line of therapeutic breast supports enables the physician to prescribe remedial supports for specific breast conditions. Each Lov-é brassiere is custom-fitted inch by inch to the patient's personal measurements . . . and in exact accordance with your instructions. *Lov-é* Corrective Brassieres are available for immediate order in appropriate long or short models, from more than 500 bust-cup-torso size variations.

Also available: sleeping brassieres, hospital binders, artificial breasts, anatomically designed muscle pads and maternity garter supports.

LOV-E SECTION
CORSET DEPARTMENT
FAMOUS-BARR CO., ST. LOUIS

DELEGATES

County	*Delegate*	*Alternate*
Pulaski	M. M. Hart, Salem	G. E. Joseph, Salem
Phelps-Crawford-Dent-Pulaski	E. O. Hughes, Dixon	W. R. Lytle, Waynesville
Pike	R. L. Andrae, Louisiana	W. B. Wilcoxen, Bowling Green
Platte	E. K. Langford, Platte City	L. C. Calvert, Weston
Ray	I. E. Goldberg, Braymer	T. F. Cook, Richmond
St. Charles		
St. Francois-Iron-Madison-Washington-Reynolds		
St. Francois-Iron-Madison-Washington-Reynolds		
St. Francois-Iron-Madison-Washington-Reynolds		
St. Francois-Iron-Madison-Washington-Reynolds		
St. Francois-Iron-Madison-Washington-Reynolds		
Ste. Genevieve	A. E. Sexauer, Ste. Genevieve	R. C. Lanning, Ste. Genevieve
St. Louis	Clyde P. Dyer, St. Louis	Eugene R. Brown, University City
St. Louis	T. H. Hale, St. Louis	John R. Daly, Richmond Heights
St. Louis	Julius Jensen, St. Louis	Oscar P. Hampton, Jr., St. Louis
St. Louis	James R. Meador, Clayton	C. E. Sanders, Richmond Heights
St. Louis	Martyn Schattyn, St. Louis	Roy A. Walther, Overland
St. Louis City	Llewellyn Sale, St. Louis	Leslie D. Cassidy, St. Louis
St. Louis City	Carl F. Vohs, St. Louis	John F. Patton, St. Louis
St. Louis City	Oliver Abel, Jr., St. Louis	Maxwell Fineberg, St. Louis
St. Louis City	Carl J. Althaus, St. Louis	S. Albert Hanser, St. Louis
St. Louis City	George A. Carroll, St. Louis	Louis N. Berard, St. Louis
St. Louis City	E. Lee Dorsett, St. Louis	Andrew C. Henske, St. Louis
St. Louis City	Edwin C. Ernst, St. Louis	Roland S. Kieffer, St. Louis
St. Louis City	Armand D. Fries, St. Louis	H. Rommel Hildreth, St. Louis
St. Louis City	R. Emmet Kane, St. Louis	Paul F. Fletcher, St. Louis
St. Louis City	Charles L. Klenk, St. Louis	Wm. H. Norton, St. Louis
St. Louis City	William B. Kountz, St. Louis	A. N. Arneson, St. Louis
St. Louis City	Curtis H. Lohr, St. Louis	James L. Mudd, St. Louis
St. Louis City	Neil S. Moore, St. Louis	Rogers Deakin, St. Louis
St. Louis City	F. G. Pernoud, St. Louis	F. G. Pernoud, Jr., St. Louis
St. Louis City	Jacob G. Probstein, St. Louis	Louis H. Kohler, St. Louis
St. Louis City	M. J. Pulliam, St. Louis	R. M. S. Barrett, St. Louis
St. Louis City	A. J. Raemdonck, St. Louis	Leo J. Hartnett, St. Louis
St. Louis City	Victor E. Scherman, St. Louis	James M. Macnish, St. Louis
St. Louis City	Robert E. Schlueter, St. Louis	Grayson Carroll, St. Louis
St. Louis City	P. C. Schnoebelen, St. Louis	Theo. H. Hanser, St. Louis
St. Louis City	A. R. Shreffler, St. Louis	Clinton W. Lane, St. Louis
St. Louis City	A. J. Signorelli, St. Louis	Sam J. Merenda, St. Louis
St. Louis City	Jerome I. Simon, St. Louis	E. Lawrence Keyes, St. Louis
St. Louis City	Edgar W. Spinzig, St. Louis	Omer E. Hagebusch, St. Louis

DELEGATES

County	*Delegate*	*Alternate*
St. Louis City	Henry P. Thym, St. Louis	Robert D. Woolsey, St. Louis
St. Louis City	V. V. Wood, St. Louis	Arthur W. Neilson, St. Louis
Saline	G. A. Aiken, Marshall	R. C. Haynes, Marshall
Scott	W. O. Finney, Chaffee	A. D. Martin, Sikeston
Shelby	P. C. Archer, Shelbyville	
South Central—		
Howell	Rollin H. Smith, West Plains	C. F. Callihan, Willow Springs
Oregon	C. W. Cooper, Thayer	F. A. Barnes, Thayer
Texas	Leslie Randall, Licking	Garrett Hogg, Jr., Cabool
Wright	R. A. Ryan, Mountain Grove	J. R. Mott, Hartville
Douglas	M. L. Gentry, Ava	R. M. Norman, Ava
Stoddard	Neal J. Touhill, Dexter	J. P. Brandon, Essex
Vernon-Cedar	C. B. Davis, Nevada	R. B. Wray, Nevada
Vernon-Cedar	N. L. Claybourn, Eldorado Springs	W. B. Richter, Stockton
Webster	E. G. Beers, Seymour	C. R. Macdonnell, Marshfield

TECHNICAL EXHIBITS

Jefferson Hotel

Abbott Laboratories, North Chicago. Booth 1.

Here you will be received heartily by our Professional Service Representatives who will welcome your questions and gladly discuss with you the new developments in the Antibiotic, Anticonvulsant, Allergenic, Sulfonamide, Hematinic, Hormone, Vitamin, Anesthetic and other fields. Please make visits to the Abbott booth a Must on your tours of the Technical Exhibits.

The Wm. S. Merrell Company, Cincinnati. Booth 2.

Infazyme, the new pleasant-tasting nutrient especially designed for the "sickly" child, is featured at the Merrell booth. This latest Merrell Pediatric Specialty combines the essential B vitamins and the whole B complex from liver, rice bran and yeast with readily available iron and supplementary amounts of the essential amino acids. The rich fruity tang of Infazyme represents an unusual taste accomplishment in a preparation containing liver, iron and amino acids. Infazyme is the first concentrated recuperative tonic containing amino acids to be specifically designed for infants and children.

Schering Corporation, 2 Broad Street, Bloomfield, New Jersey. Booth 3.

Important new hormone and pharmaceutic preparations are featured at the Schering booth. Micropellets Progynon is a new potent form of the female sex hormone. Combisul and Combisul Liquid are the triple sulfonamide combinations which eliminate the dangers of sulfonamide renal damage. New high potencies of Oreton-M Pranone and Progynon-B are presented. Schering Professional Service Representatives will welcome you and will be happy to answer your inquiries concerning Schering's new products as well as the older and time-tested hormones, x-ray diagnostic, chemotherapeutic and pharmaceutical preparations.

V. Mueller & Company, 408 South Honore Street, Chicago. Booth 4.

As usual, we have on display as many new items as possible and our exhibit is attended by our Missouri Representatives, E. J. Marlotte and R. F. Poston.

Mead Johnson & Company, Evansville, Ind. Booths 5 and 6.

Amigen and Protolysate are on display at the Mead Johnson Exhibit. Mead Johnson has pioneered the amino acid field commercially; the products have been described in more than one hundred and forty articles in the medical literature; this year they are available. Trained representatives are at the Mead Exhibit to discuss details of the new amino acid products. Shown also are Dextri-Maltose, Pablum, Oleum Percomorphum and the other Mead Products used in Infant Nutrition. Protenum, a new high-protein product is displayed; also Lonalac for low-sodium diets.

The C. V. Mosby Company, 3207 Washington Blvd., St. Louis. Booth 7.

New and recent releases to be displayed at Booth 7 by the C. V. Mosby Company include Crossen "Operative Gynecology," Ackerman-Regato "Cancer," Watson "Hernia," Clendening-Hashinger "Methods of Diagnosis," Pottenger "Tuberculosis," Johnstone "Occupational Medicine and Industrial Hygiene," Top "Communicable Diseases," Jeans-Marriott "Infant Nutrition," Eve "Handbook of Fractures," McCormick "Pathology of Labor, the Puerperium, and the Newborn," Treiger "Atlas of Cardiovascular Diseases," and Wiener "Skin Manifestations of Internal Disorders." Your examination of any of these, as well as the many other titles to be shown, is cordially invited.

A. S. Aloe Company, 1831 Olive Street, St. Louis. Booth 8.

The representatives of the A. S. Aloe Company welcome their friends at Booth 8 where they have on display a representative cross section of our complete line of Surgical, Hospital and Laboratory equipment and supplies. Featured is a complete line of government surplus instruments available at the present time—especially selected, fully certified instruments at approximately one half the regular cost.

Carnation Company, Los Angeles, Calif. Booth 9.

You are invited to visit Booth 9 where you will see an attractive display on Carnation Evaporated Milk—"The milk every doctor knows." Some valuable information on the use of this milk for infant feeding, child feeding and general diet is presented and the method by which Carnation is generously fortified with pure crystalline Vitamin D—400 U.S.P. units per reconstituted quart—is explained. Interesting literature is available for distribution.

All worth while laboratory examinations; including—

Tissue Diagnosis

The Wassermann and Kahn Tests

Blood Chemistry

Bacteriology and Clinical Pathology

X-Ray including Gastro-Intestinal Study and Gall Bladder Visualization

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$50.00 weekly indemnity, accident and sickness	quarterly
$15,000.00 accidental death	**$24.00**
$75.00 weekly indemnity, accident and sickness	quarterly
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Medical Advertisement



From where I sit
by Joe Marsh

Are You "Hobby Happy"?

Funny thing about hobbies . . . When Ed Carey started making a model of the "Flying Cloud," it was only to rest his eyes from reading. But now he spends just about every spare moment ship modeling!

Some wives might have resented a husband suddenly shutting himself in the attic every night. But not Ed's wife. When she found him working late, she brought him up some beer and crackers . . . showed a real interest in his hobby . . . until finally Ed had her helping him with the rigging.

Wasn't very long before they were working side by side on Ed's bench, sharing a common interest. Instead of keeping them apart, Ed's hobby brought them more together.

From where I sit, a husband's hobby can often be a wife's as well. In fact, I've got the missus interested in tying trout flies—and, along with that mellow glass of beer, it makes the evenings go by mighty pleasantly.

Joe Marsh

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C. W. Alban & Company, Inc., 3626 Olive Street, St. Louis. Booth 10.

Alban Company presents a complete service in medical books of all publishers, surgical instruments and supplies, microscopes, diagnostic sets and projection equipment. Stille-Sweden, the finest in instruments, are a special feature, along with the best in American Stainless Steel. Physicians office and treatment room furniture needs are included in the popular white metal suites as are sterilizers, suction outfits, centrifuges and treatment lamps.

W. B. Saunders Company, West Washington Square, Philadelphia. Booth 11.

This company is exhibiting their full line of books including Hyman's "Integrated Practice of Medicine," Bockus' "Gatroenterology," Kinsey's "Sexual Behavior in the Human Male," Sollmann's "Pharmacology," Beckman's "Treatment," Todd & Sanford's "Clinical Diagnosis by Laboratory Methods," Christopher's "Minor Surgery," Cutting's "Clinical Therapeutics," Dowling's "Acute Bacterial Disease," Bastedo's "Pharmacology, Therapeutics and Prescription Writing," Wecnsler's "Clinical Neurology," 1947 Mayo Clinic Volume, Gifford & Adler's "Ophthalmology," American Illustrated Medical Dictionary, McCombs' "Internal Medicine in General Practice," History of the American Medical Association, Cecil's "Medicine," Wharton's "Gynecology and Female Urology," "Rubin's "Diseases of the Chest and X-Ray," Boyd's "Surgical Pathology," Duncan's "Diseases of Metabolism," DeLee & Greenhill's "Obstetrics," Ranson's "Anatomy of the Nervous System," Cookes "Alergy," Novak's "Gynecologic and Obstetric Pathology" and many others.

Spencer Incorporated, New Haven, Conn. Booth 12.

We extend a cordial invitation to visit our exhibit displaying individually designed supports for abdomen, back and breasts. One of the supports displayed is the Spencerflex, a light-weight, flexible and masculine-appearing support for men. It is especially suitable for postoperative wear. The Spencer Lumbosacral Support also is featured. Designed to immobilize the affected joints to relieve pain caused by lumbosacral derangement, this support provides adequate abdominal support as well. The Spencer Maternity Corset which supports the abdomen and back during pregnancy without restricting natural figure expansion, is being shown.

Parke, Davis & Company, Detroit. Booth 13.

Members of Parke, Davis & Company's Medical Service Staff, fully informed regarding the progress in Pharmaceutical and Biological Research, and desirous of presenting various new advancements to you, are on hand at our Technical Exhibit to discuss new and old products. Featured are such outstanding Specialties as Benadryl, Vitamins, Adrenalin, Oxycel and Thrombin, Topical. Also, the most recent types of Biologicals, including other therapeutic agents of chemotherapeutic interest, are displayed. We invite you to visit our Exhibit while attending this Meeting.

Pevely Dairy Company, 1001 S. Grand Blvd., St. Louis. Booth 14.

E. R. Squibb & Sons, 745 Fifth Avenue, New York. Booth 15.

A wide variety of newly released Squibb preparations for prescription use are exhibited, among them Liafon, a new hematinic, Pneumococcus Polysaccharides for Active Immunization, Penicillin Soluble Troches 5,000 units, P.O.W. Fluid, Amniotin Suppositories (capsule type), and Diethylstilbestrol Tablets 25 mg.

Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N. Y. Booth 16.

Among significant products featured are "Wellcome" Globin Insulin which provides an action which is timed to be more suitable for the average diabetic; "Tabloid" "Empirin" Compound with Codeine Phosphate gr. 1, No. 4, for relief of severe pain; "Nutragest," the palatable dietary compound containing predigested proteins (amino acide and polypeptides), carbohydrates; and "Methedrine," a recent sympathomimetic drug of wide therapeutic application.

Cameron Heartometer Company, 666 W. Division Street, Chicago. Booth 17.

The Medical Protective Company, Fort Wayne, Indiana. Booth 18.

The Medical Protective Company is represented at Booth 18 where you are invited to call. Medical Protective Service is an institution of the Medical profession whose legal liability problems we have concentrated upon for forty-nine years. Bring your professional liability questions and problems to Booth 18. Our representative is at your service to present our Protection plan, to explain the peculiar relation of the doctor to the law which governs your practice or to discuss any particular phase of Professional Liability in which you are especially interested.

Massachusetts Indemnity Insurance Company, Boston, Mass. Booth 19.

Representatives are at Booth 19 to discuss any problem you may have on Permanent Total Disability. Feel free to avail yourself of the experience of these men in this important matter. Massachusetts Indemnity is the foremost exponent of Non-Cancellable, Guaranteed Renewable Disability Annuities and features the Silver Seal Policy—the "buy-word" of the nation's physicians. General Agencies in St. Louis and Kansas City serve all members of the Association.

St. Louis District Dairy Council, 4030 Chouteau Avenue, St. Louis. Booth 20.

"Six, Sixteen or Sixty," a nutrition exhibit by the Dairy Council of St. Louis. The subject of health in relation to good food habits is stressed by the phrase "Whether you are Six, Sixteen or Sixty, You Need These Foods Daily." Three attractive photographs show healthy people of representative ages and a large flash wheel, in color, selects the basic seven food groups needed daily.

United Medical Equipment Company, 1114 Grand Avenue, Kansas City. Booth 21.

We are demonstrating the Direct Recording Cardiotron. Actual Electricardiograms are run on Permanent Scratch Proof Cardiotron Paper. The latest in x-ray equipment, the Profex-ray TC2B Unit, is being displayed. The newest model, FCC approved, Birtcher line of Diathermy, is featured. Do not fail to see this most interesting exhibit.

Farnsworth Laboratories, 3206 North Wilton Avenue, Chicago. Booth 22.

We invite you to see our representatives at Booth 22. They have some interesting



THE MEDICAL PROFESSION

Dorsey

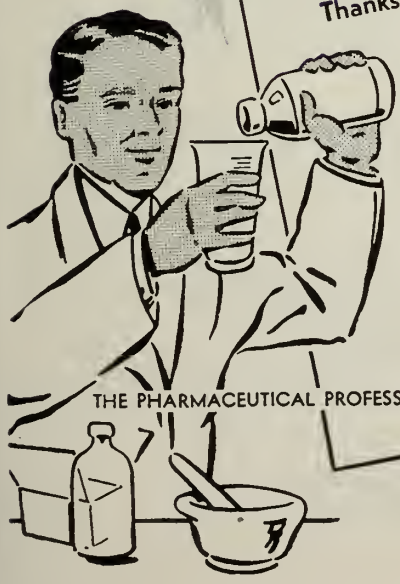
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Thanks to your loyal encouragement and patronage, we are today able to repay our sponsors with excellent service and high standard products assured by a new research and manufacturing plant . . . increased research grants . . . added research personnel . . . two new branch offices and shipping warehouses . . . added medical service representation.



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data concerning the latest clinical approach on the treatment of Brucellosis or undulant fever.

PHILIP MORRIS & CO. LTD., INC., 119 FIFTH AVENUE, NEW YORK. BOOTH 23.

Philip Morris & Company are demonstrating the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject and problems on the physiologic effects of smoking.

C. B. FLEET CO., INC., 921-927 COMMERCE STREET, LYNCHBURG, VA. BOOTH 24.

Phospho-Soda (Fleet), the pure, stable aqueous concentrate of the two U. S. P. Sodium Phosphates has been detailed to the medical profession for more than fifty years. Our representative, Mr. Paul Holzapfel, at Booth 24 will welcome the opportunity of discussing with you its application in hepatic and gallbladder dysfunctions and in conditions requiring a saline laxative.

CAMERON SURGICAL SPECIALTY COMPANY, 666 W. DIVISION STREET, CHICAGO. BOOTH 26.

See the new Cameron Cauterodynes and Cauteradios for Electro-surgery, Electrocauterization and Electro-coagulation; Coagulair-Sigmoidoscope; Electro-Diagnostosets; Radiolucent Cannula; Flexible Gastroscopes; Bronchoscopes—Esophagoscopes—Laryngoscopes; Mirror Headlites; Binocular Spectacle Loupe; Magniscope and other Specialties.

U. S. VITAMIN CORPORATION, 250 EAST 43RD STREET, NEW YORK. BOOTH 27.

Full color illustrated brochure "Diagnosing Vitamin Deficiencies" together with professional samples and literature on Vi-Syneral, Poly-B, Vi-Litron, Hypervitam, Lipo-Heplex, Desiver, Amiprote, Methischol, Tri-Sulfanyl and others are on display.

WM. P. POYTHRESS & CO. INC., RICHMOND, VA. BOOTH 28.

A cordial welcome awaits you at the Wm. P. Poythress Booth 28. Ray Smith, St. Louis representative of Poythress, is in charge. Solfoton, the distinctive mild sedative; T C S, the excellent theobromine-phenobarbital tablet; Panalgesic, highly effective local analgesic; Uro-Phosphate, urinary antiseptic; Merpectogel, for vaginitis; and other Poythress products are available for discussion or for clinical trial. Please visit us.

CAMEL CIGARETTES, ONE PERSHING SQUARE, NEW YORK. BOOTHS 29 & 30.

Camel Cigarettes presents a dramatic full color review of their recent medical research on smoking, as well as the details of the nationwide survey showing that "More Doctors Smoke Camels Than Any Other Cigarette." Another panel illustrates the absorption of nicotine in the respiratory tract. Representatives are present.

CIBA PHARMACEUTICAL PRODUCTS, INC., SUMMIT, NEW JERSEY. BOOTH 31.

Ciba Pharmaceutical Products, Inc., invite you to visit their exhibit for latest information on steroid sex hormones. We are featuring economical oral hormone therapy with Metandren Linguets, the most effective oral androgen; Lutocylol Linguets, the most effective oral progestogen; and Ethinyl Estradiol, the most potent oral estrogen. Representatives in attendance will be glad to answer any questions that you may have concerning these and other Ciba products.

THE BORDEN COMPANY, 350 MADISON AVENUE, NEW YORK. BOOTH 32.

We invite your attention to Protolac, a new especially-formulated blend of intact proteins and high protein products derived from animal and vegetable sources. Protolac is supplemented with choline and the amino acid cystine. Protolac is indicated in high protein therapy in conditions requiring increased dietary protein of optimum nutritional value. Likewise exhibited are our long established products for infant feeding: Biolac, Dryco, Mull-Soy, Merrell Soule Special Milks, general purpose Klim and Beta Lactose.

SMITH, KLINE & FRENCH LABORATORIES, FIFTH AND ARCH STREETS, PHILADELPHIA. BOOTH 33.

Professional Representatives will be glad to answer questions and to discuss uses in your own practice of several interesting products, among which are Dexedrine Sulfate Tablets. Few therapeutic agents have risen so dramatically and rapidly to preeminence as Dexedrine Sulfate. Today, its widespread clinical usefulness in depressive states and weight reduction makes this drug undeniably the central nervous stimulant of choice. Dexedrine is remarkable in that it spares the patient the disturbing consciousness of a "drug stimulation," is virtually a "single action" drug and has an extremely wide margin of safety. Edrisal: Edrisal not only affords unusually effective relief from pain, but also—because it contains Benzedrine Sulfate in addition to acetylsalicylic acid and phenacetin—markedly improves the patient's mental outlook, a prime objective in the symptomatic treatment of painful conditions.

ELI LILLY AND COMPANY, INDIANAPOLIS. BOOTH 34.

The Lilly exhibit features a presentation on "Dolophine Hydrochloride" (Methadon Hydrochloride, Lilly). You will be interested in the comparison of postoperative relief of pain with "Dolophine Hydrochloride," 10 mg. and Morphine, 15 mg. Many other Lilly products are on display. Attending Lilly medical service representatives are present to aid visiting physicians in every way possible.

THE DOHO CHEMICAL CORPORATION, 58 VARICK STREET, NEW YORK. BOOTH 35.

The makers of Auralgan are featuring their new sulfa preparation Otosmosan, indicated in the treatment and control of chronic suppurative ears. Also, Mallon, Division of Doho is introducing our new topical anesthesia, Rectalgan, for relief of pain and itching in hemorrhoids and pruritus. This new therapy enjoys many advantages over the outmoded rectal suppositories and ointments. Our representatives will be happy to explain in detail the workings of these medications.

THE HYGEIA NURSING BOTTLE CO. INC., BUFFALO. BOOTH 37.

You are cordially invited to visit Booth 37 to see the advantages of the New improved 4 and 8 ounce Hygeia Nursing Bottle Units. Learn why prescribing the Hygeia unit—including bottle, nipple and cap—will help mothers overcome feeding problems. Mr. Charles M. Clark is in attendance.

WINTHROP-STEARNS INC., 170 VARICK STREET, NEW YORK. BOOTH 38.

Winthrop-Stearns Inc., New York, extends a cordial invitation to visit their Booth 38 where representatives are on hand to discuss the latest pharmaceutic preparations made by this firm. Featured are Demerol, powerful analgesic, spasmolytic and sedative; Creamalin, nonalkaline, nonabsorbable antacid; Neocurtasal, sodium-free seasoning agent and Neo-Synephrine with Penicillin.

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RALPH EMERSON DUNCAN, M.D.
DIRECTOR

MAURICE L. JONES, M.D.
ASSOCIATE DIRECTOR

Eaton Laboratories Inc., Norwich, New York. Booths 39 and 40.

The Eaton Laboratories, Inc., are exhibiting several pharmaceutic preparations of interest to the Medical Profession. Furacin Soluble Dressing containing a new chemotherapeutic agent Furacin (brand of nitrofurazone) is being exhibited. This compound is a new antibacterial agent recently accepted in New and Nonofficial Remedies. Furacin Solution, a new vehicle for Furacin, also is being exhibited. This new liquid vehicle for Furacin has been compounded at the request of many clinicians for use in conditions where the soluble dressing is inconvenient or contraindicated. A new gastric antacid—Aspogen—for the treatment of peptic ulcer is exhibited. Aspogen is the Eaton brand of basic aluminum aminoacetate, the aluminum salt of the amino acid glycine. Its action is rapid, prolonged and nonconstipating. Our representatives will be pleased to discuss these products with all who register at the Eaton booth. The latest professional literature and samples are available.

White Laboratories, Inc., 133 North 13th Street, Newark, N. J. Booth 41.

White's Dienestrol Tablets (Council Accepted), a new orally effective synthetic estrogen, is featured. Complete information and literature are available regarding the advantages of Dienestrol's high biologic activity, excellent patient-tolerance and economy. Other products of White Laboratories are on display and White's Medical Service Representatives in attendance will be pleased to supply any further information requested.

F. A. Davis Company, 1914 Cherry Street, Philadelphia. Booth 42.

Following is a partial list of new books and new editions which are on display at Booth 42. Drop in and look them over: Arthritis—Bach; Gall Bladder Diseases—Behrend; Clinical Tuberculosis—Goldberg; Reparative and Reconstructive Surgery—May; Dermatology—Greenbaum; Ear, Note and Throat—Lederer; Clincial Radiology—Pillmore; Pediatric Therapy—Litchfield and Dembo; Rhinoplasty—Maliniac; Diagnostic Signs—Robertson; Pre and Post-operative Medicine, Surgery and Specialties—Piersol and Bortz; Medical and Physical Diagnosis—Loewenberg; Pediatric Progress—Litchfield and Dembo; Textbook of Ear, Nose and Throat—Lederer and Hollender; Clinical Cystoscopy—McCrea.

Varick Pharmacal Company, 75 Varick Street, New York. Booth 43.

The theme of this exhibit is the use of Digitaline Nativelle, the original digitoxin, in single dose oral digitalization. The panel portrays graphically, by means of a clocklike figure, the three to six hours required for digitalization. A miniature showcase contains specimens of the product. Samples of Digitaline Nativelle and literature are available. We sincerely invite you to visit our exhibit.

Hoffman-La Roche, Inc., Roche Park, Nutley, New Jersey. Booth 44.

Roche is happy to exhibit at the meeting of the Missouri State Medical Association. They invite members of the Association to visit Booth 44 where members of the representative staff are present to discuss such new products as Syrup Sedulon, a sedative couth preparation; Thephorin, an antihlstamine compound; Rayopake, a contrast medium; and other products of interest to physicians.

Lederle Laboratories Division, American Cyanamid Company, 30 Rockefeller Plaza, New York. Booth 45.

The Lederle exhibit features purogenated diphtheria, tetanus and diphtheria-tetanus toxoids, new highly refined antigens characterized by lessened reactivity and antigenic in lower doses, Folvite brand folic acid, a synthetic product useful in certain types of macrocytic anemias, and Cardiolipin, a stable non-nitrogenous phospholipid from beef heart used in tests for syphilis.

Ames Company, Inc., Elkhart, Indiana. Booth 46.

Ames Company representatives will be glad to discuss Decholin, the standard hydrocholeretic agent for the treatment of biliary tract diseases. They are demonstrating Clinitest and Hematest—simplified tests for the detection of urine-sugar and occult blood.

Sharp & Dohme, Inc., Philadelphia. Booth 47.

Sharp & Dohme extends a cordial welcome to all visitors at Booth 47. Items on exhibit include a new dosage form of "Delvinal" Sodium Vinbarbital for the production of obstetric amnesia and analgesia, new antibiotic preparations including Tyrothricin along with "Sulfathalidine" and "Sulfasuxidine," intestinal bacteriostatic agent.

Dumas-Wilson & Co., 4821 Fairview Avenue, St. Louis. Booth 48.

"The House of Nutrition."

The Coca-Cola Company, Wilmington, Delaware. Booths 49 and 50.

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Holland-Rantos Company, Inc., 551 Fifth Ave., New York. Booth 51.

At Booth 51 you will find on display; Koromex Contraceptive Specialties—the Koromex Set Complete, a convenient unit, diaphragm, introducer, jelly and cream. Nylmerate Jelly—Contains phenyl mercuric acetate; a new and effective treatment for trichomoniasis and nonspecific leukorrhea. Electro Jelly—For use with electrocardiographic and electroencephalographic equipment in shock therapy. Representatives will be pleased to discuss products of particular interest to you.

Dick X-Ray Company, 3974 Olive Street, St. Louis. Booth 52.

Bilhuber-Knoll Corp., Crane Street, Orange, New Jersey. Booth 53.

For information on the latest development of the medicinal chemicals of Bilhuber-Knoll Corp., visit Booth 53. Your discussions will be welcomed on Oenethyl—their new vasopressor; Octin—antispasmodic; Metrazol—analeptic and antianoxiant; Theocalcin—diuretic and myocardial stimulant, and Dilaudid—analgesic and cough sedative. These and their other dependable prescription chemicals are prescribed alone or in combinations with other drugs as the individual patient may require. Mr. Jack Wilson Love is in charge.

Lanteen Medical Laboratories, Inc., 900 N. Franklin Street, Chicago. Booth 54.

Lanteen Medical Laboratories, Inc., extends an invitation to visit their exhibit. Featured are Procarmin and their well-known line of gynecic specialties.

Pet Milk Sales Corporation, Arcade Bldg., St. Louis. Booth 55.

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2. Infection-fighting drugs. Peritonitis, once feared as a frequent complication of abdominal surgery, today is uncommon. The use of such agents as the sulfa drugs and penicillin—to treat infection or to guard against it—has almost eliminated many of the infections which formerly constituted the greatest dangers in surgical procedures.

3. Early ambulation. Doctors have found that getting patients out of bed soon after operations not only speeds recovery, but also prevents many of the discomforts formerly suffered. Bowel and urinary functions are quickly restored. Gas pains are usually avoided. It is not unusual nowadays for a patient to be well enough to go home from the hospital in less than ten days after a major operation.

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tendance to give you information about the production of Pet Milk and its use for infant feeding. Miniature cans are being given to physicians visiting the exhibit.

Electro Physical Laboratories, St. Louis. Booth 56.

Picker X-Ray Corp. of Missouri, 3858 Westminster Place, St. Louis. Booth 57.

A Picker-Waite Century is being exhibited. This unit consists of a Tilting Radiographic-Fluoroscopic Diagnostic X-Ray Table, X-Ray Generator and Automatic Control. This unit contains features developed during the war when the Picker-Waite organization were the exclusive suppliers of the famous Army Field X-Ray Unit, some 10,000 of which were delivered to the U. S. Army and Allied Forces. An assortment of Radiographic and Fluoroscopic Accessories also is being exhibited.

Jones Metabolism Equipment Co., 3905 Olive Street, St. Louis. Booth 58.

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Washington University School of Medicine, Postgraduate Division, St. Louis. Booth 63.

The exhibit of the Postgraduate Division of the Washington University School of Medicine consists of photographic material illustrating various phases of postgraduate activities. Through these photographs it is endeavoring to show some of the things being presented in the postgraduate courses which have and will be given. In addition, certain phases of the activities of the Auxiliary Medical Services are illustrated.

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G. D. Searle & Company, Chicago, Illinois. Booth 65.

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M & R Dietitic Laboratories, Inc., Columbus, Ohio. Booth 66.

M & R Dietetic Laboratories, Inc., Booth 66, is displaying Similac, a food for infants deprived either partially or entirely of breast milk. Messrs. B. C. Palmer, R. E. Davis and A. E. Brown will appreciate an opportunity to discuss the merit and suggested application for both the normal and special feeding cases.

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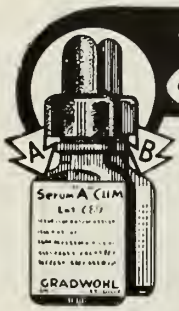
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*Barr, Joseph S., *Ruptured Intervertebral Disc and Sciatic Pain*, Jr. Bone and Joint Surg., 29: 429-437 (April) 1947.

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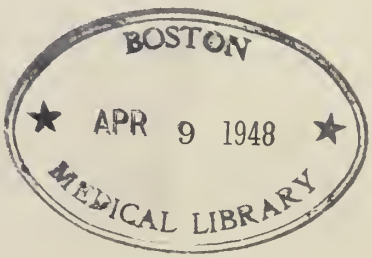
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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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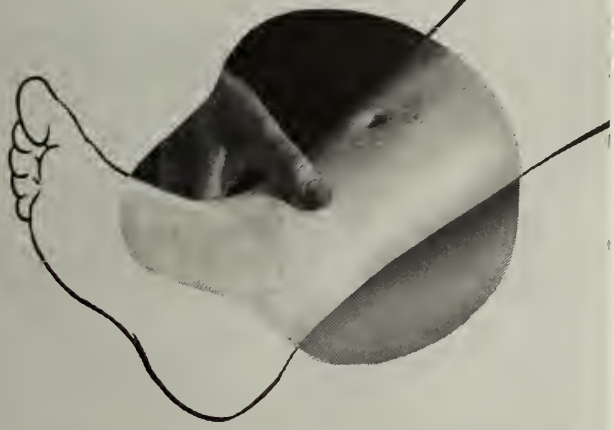
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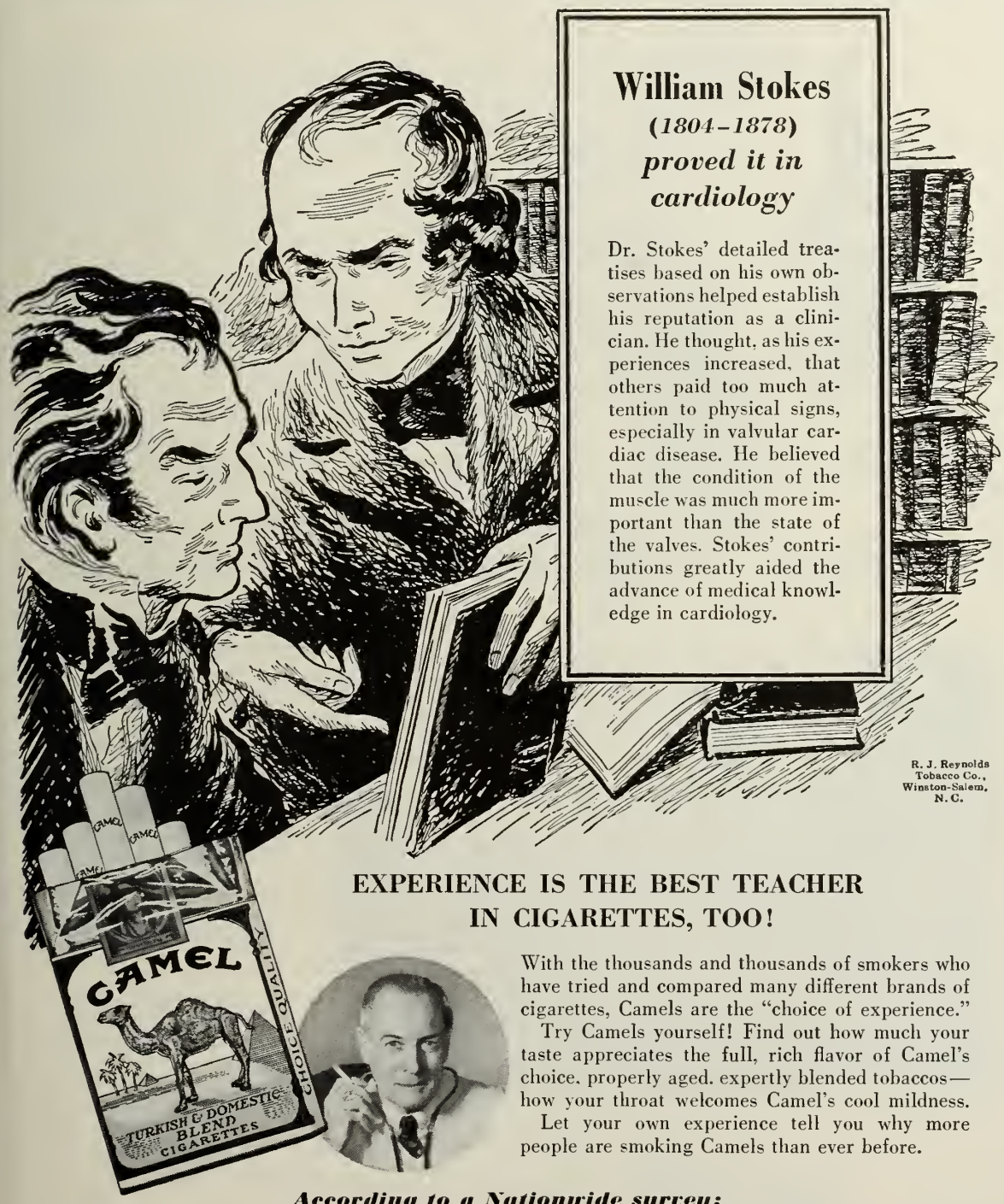


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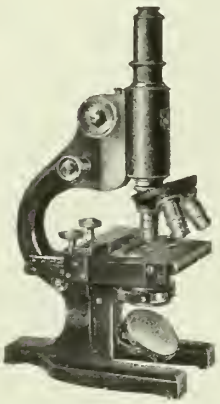
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THE JOURNAL

OF THE

Missouri State Medical Association

The Official Organ of the State Association and Affiliated County Societies
Issued Monthly under direction of the Publication Committee

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VOLUME 45 — APRIL, 1948 — NUMBER 4

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UNUSUAL ANOMALY OF THE GALLBLADDER AND BILE DUCT

B. L. SINNER, M.D., *St. Louis*

AN ANATOMIC variation of the gallbladder and bile ducts which is unique in my experience and the counterpart to which has not been found in the literature is presented. The completed picture of the anatomy of the gallbladder and ducts in this case was arrived at by combining the operative findings with those of the postoperative cholangiogram. Since the abnormal anatomy was at least in part responsible for the pathologic condition encountered, a brief review of the clinical course is presented.

REPORT OF CASE

On May 6, 1946, a 60 year old male was admitted to the hospital at the St. Louis City Sanitarium for epigastric distress and jaundice. A diagnosis of stone in the common duct was made. Operation was refused by the patient's relatives and he was treated with vitamin K, intravenous infusions of glucose and high protein, high carbohydrate, low fat diet. He improved and was discharged free of icterus on May 27, 1946.

He was readmitted to the hospital on August 9, 1946, with abdominal pain and jaundice. His general condition again improved with nonsurgical treatment and the icterus began to subside. However, on August 17 he became acutely ill with severe epigastric pain, board-like abdomen, fever (101 F.), tachycardia (126) and rapid respirations (28). Blood diastase eight hours after onset was 1,270. A diagnosis of acute pancreatitis superimposed on common duct stone was made. He was treated with infusions of glucose solution and plasma for four days, at the end of which time he was able to take food by mouth. He improved steadily and by August 29 was free of icerus and pain.

A cholecystogram (oral technic) on September 3, 1946, revealed no gallbladder shadow and no radio-opaque calculi. On September 11 he was discharged from the hospital to regain his strength in preparation for operation, permission for which had been granted after the severe illness.

He was readmitted to the hospital on October 10 and operated upon on October 14 under spinal anesthesia.

Operative Findings.—The liver was enlarged to two inches below the costal margin, it was darker than normal and mottled, the edges were blunt and the surface smooth. The head of the pancreas was about one and one-half times normal size, firmer than normal but not stony hard. The stomach, duodenum and spleen were normal. The gallbladder was of normal size and shape and in its usual position; its wall was dull gray and edematous. The cystic duct began at the fundus of the gallbladder, ran in the wall of the organ to its neck and continued downward behind the duodenum well into the pancreas. The neck of the gallbladder was a blind pouch. There were two stones in the gallbladder about

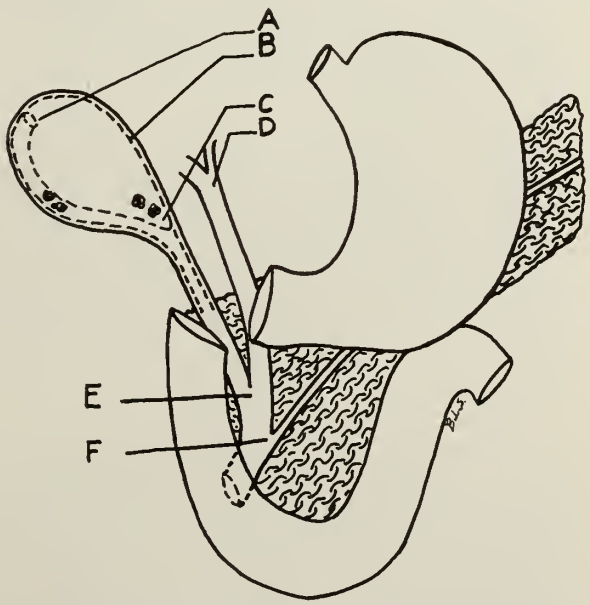


Fig. 1. Diagram of gallbladder and duct system. A. Cystic duct running in wall of gallbladder and opening high up in the fundus. B. Mucosa of gallbladder. C. Blind neck of gallbladder. D. Hepatic duct. E. Junction of cystic with hepatic duct. F. Junction of pancreatic duct with common duct. There are two stones in the gallbladder and two in the cystic duct.

Instructor in Surgery, St. Louis University School of Medicine; formerly visiting surgeon, St. Louis City Sanitarium.

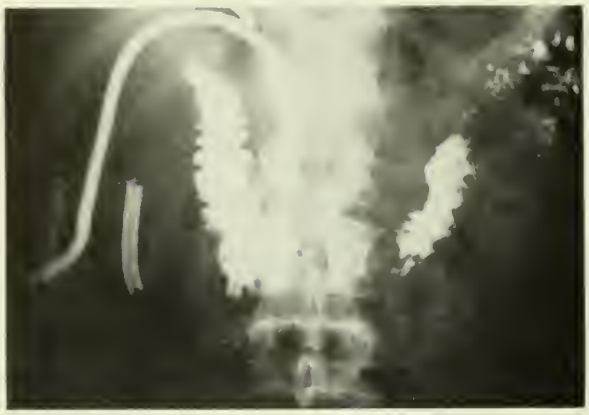


Fig. 2. Cholangiogram shows catheter in place with ducts and duodenum filled with lipiodol. Arrow points to the terminal end of pancreatic duct as it joins the common duct.

½ cm. in diameter and two of similar size in the cystic duct (fig. 1).

Operative Procedure.—A transverse incision was made two inches above the umbilicus, extending from the midline six inches to the right; the rectus muscle was cut transversely and the oblique muscles and transversus abdominis were split in the same plane. The peritoneum was opened and the upper abdomen explored. The viscera were packed away from the gallbladder and dissection of the cystic duct was begun. It was followed behind the duodenum well into the pancreas which was extremely vascular due to the recent inflammation. At this point the patient went into severe shock so the dissection was not carried further. The cystic duct was opened just above the duodenum and two stones removed from it. A catheter passed downward in the cystic duct entered the duodenum readily and 40 cc. of normal saline were injected into it without regurgitation. When the catheter was passed upward in the duct it hugged the inferior wall of the gallbladder instead of entering the gallbladder cavity. When the gallbladder was opened the catheter could be seen emerging from a mucosa-lined channel in its wall, high up in the fundus. Two stones were removed from the blind neck of the gallbladder. A 14 F catheter was inserted into the duct from the fundus downward and the gallbladder closed loosely around it. The incision in the cystic duct was closed. A Penrose drain was placed in the suprarenal fossa and brought out through the right end of the incision along with the catheter. Bile began to issue from the catheter soon after the operation.

On the third postoperative day a cholangiogram was made. The description of the cholangiogram by Dr. W. K. Mueller is as follows: Lipiodol injected into the catheter passes readily into the common duct which is well visualized as are several branches of the hepatic ducts. Lipiodol passed readily from the common duct into the duodenum. No filling defects or evidence of obstruction noted. The distal end of the pancreatic duct is seen joining the common duct a short distance from its termination in the duodenum (fig. 2).

The postoperative course was uneventful. The catheter drained bile until the fourteenth postoperative day when it was removed. Drainage ceased immediately on removal.

On Nov. 18, 1946, thirty-nine days after the first operation, the incision was reopened and the gallbladder removed. Convalescence was uneventful and the patient was discharged from the hospital on December 3 free of pain and icterus, afebrile, gaining weight, and taking a liberal low fat, high protein, high carbohydrate diet. He has been well up to the time of this writing.

COMMENT

The long parallel cystic duct joining the hepatic duct just proximal to Vater's papilla was described by Ruge[1] and others and is not an uncommon variation from the normal. However, the blind neck of the gallbladder, the intramural course of the cystic duct, and the opening of the duct high up in the fundus of the gallbladder have not been previously reported to my knowledge. The causative relationship between the abnormal anatomy of the cystic and pancreatic ducts and the biliary stasis with infection and formation of calculi and the development of pancreatitis is apparent.

For detailed descriptions of the important anatomic variations of the gallbladder and ducts and of the hepatic and cystic arteries there are comprehensive articles by Ruge,[1] Eisendrath,[2, 3] and Stolkind.[4]

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DISINFECTANT ON HANDKERCHIEFS MAY HELP KEEP COLDS FROM SPREADING

Using a disinfectant on handkerchiefs might be one step toward preventing the "common cold" from spreading, according to the London correspondent of *The Journal of the American Medical Association*, writing in the February issue.

Reporting on a lecture by Dr. C. H. Andrewes, F. R. S., of the National Institute for Medical Research, on recent research on the common cold, *The Journal's* correspondent said that "some recent evidence suggested that more unpleasant germs were spread from the nose than from the mouth and throat, which led to the question whether bacteria and viruses accidentally shaken from handkerchiefs might not be of great importance. Tests showed that many bacteria might be shaken out and remain in the air. Handkerchiefs from the later stages of colds were found to be particularly effective as germ distributors. Work now in progress suggested that impregnation of handkerchiefs with a disinfectant might make them much less dangerous in this respect."

THE OCCURRENCE OF ENDEMIC TYPHUS FEVER IN KANSAS CITY, MISSOURI

VICTOR B. BUHLER, M.D., *Kansas City, Missouri*
AND
MARTIN J. MUELLER, M.D., *Kansas City, Missouri*

SINCE AUGUST 1945 eight cases of murine typhus fever have been observed at the Municipal Hospital No. 1, Kansas City, Missouri. During the preceding decade, no cases were recorded in Kansas City[1] and only two cases were reported to the Missouri State Health Department.[2] The histories of these eight cases indicated that the infections were acquired in Kansas City. A preliminary survey showed a high incidence of typhus infection of rats as determined by complement fixation tests. On the basis of this evidence, it seems correct to conclude that murine typhus is endemic in Kansas City, Missouri, and its existence should be called to the attention of the medical profession.

REPORT OF CASES

Case 1. K. E., white female, housewife, aged 34, was admitted on August 27, 1945. Seven days before, she had headache, chills and fever. Headache and fever persisted and on the day of admission a rash developed. She had been in Illinois one month before, and on a fishing trip one week previous to admission. Physical examination showed an acutely ill, febrile, dehydrated female. There was a discrete reddish brown macular rash on the trunk and extremities. Laboratory data: Hb. 7.5 gms.; red blood cells 2,600,000; white blood cells 7,500 (52 per cent polymorphonuclears, 45 per cent lymphocytes, 3 per cent monocytes). Urinalysis: normal except for a trace of albumin. The Weil-Felix reactions, skin rash and temperature records are shown in figure 1. She was given sulfadiazine for three days and two blood transfusions. Recovery was complete by September 11, 1945.

Case 2. L. S., white male, aged 45, was admitted on September 16, 1945. Ten days before he developed severe headache, weakness and fever. Three days before admission his temperature was 102.6 F. He was an electrician, and had not been out of Kansas City for "many months." Physical examination gave normal findings. Laboratory data: Hb. 81 per cent; white blood cells 18,750 (62 per cent polymorphonuclears, 28 per cent lymphocytes, 10 per cent monocytes). Urinalysis: 1+ albumin. Treatment included penicillin and sulfadiazine. Recovery was complete by September 23. Figure 2 shows temperature and Weil-Felix reactions. No skin rash was observed at any time.

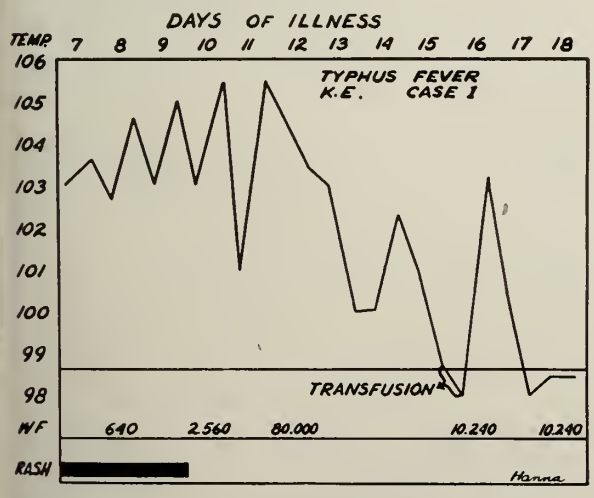


Fig. 1.

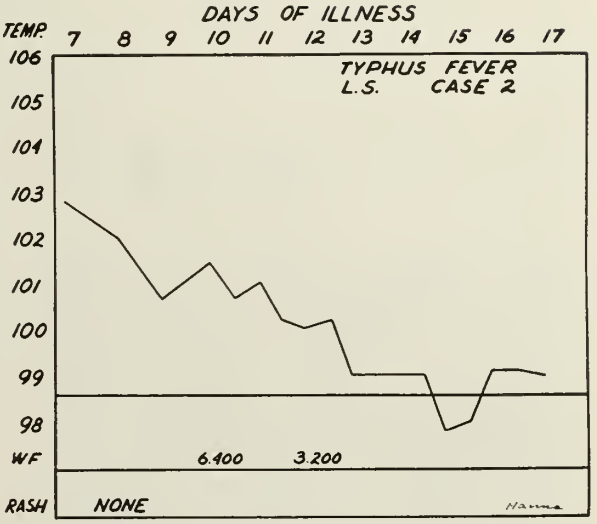


Fig. 2.

Case 3. C. B., white male, aged 36, was admitted on October 5, 1945, complaining of chills, fever, backache and headache of three days duration. On the day of admission there was chest pain, cough, nausea and vomiting. He was a painter and had not been out of Kansas City recently. Physical examination showed only the presence of an acute febrile reaction. Laboratory data: Hb. 96 per cent; white blood cells 8,900 (65 per cent polymorphonuclears, 32 per cent lymphocytes, 3 per cent monocytes). Urinalysis: normal. On the ninth day of illness there appeared on the trunk and upper arms a brownish red macular rash. The course of the fever, rash and Weil-Felix reactions is shown in figure 3. Recovery was complete by October 18, 1945.

Case 4. J. C., white male, aged 32, was admitted on February 26, 1946. Six days before there was an abrupt onset of illness characterized by chills, fever, cough and headache, all of which persisted to the time of admission. He had received sulfonamide medication from the onset without benefit. He was a feed mill laborer and his place of employment was heavily infested with rats. He had not been outside of Kansas City for several months. Physical examination was negative except for fever. Laboratory data: Hb. 84 per cent; white blood cells 12,600 (74 per cent polymorphonuclears, 21 per cent lymphocytes, 5 per cent monocytes). Urinalysis: normal. On the ninth day of his illness, he developed a fine macular, light red rash on the thighs, abdomen,

From the Departments of Pathology and Internal Medicine, Municipal Hospital No. 1, Kansas City, Missouri.

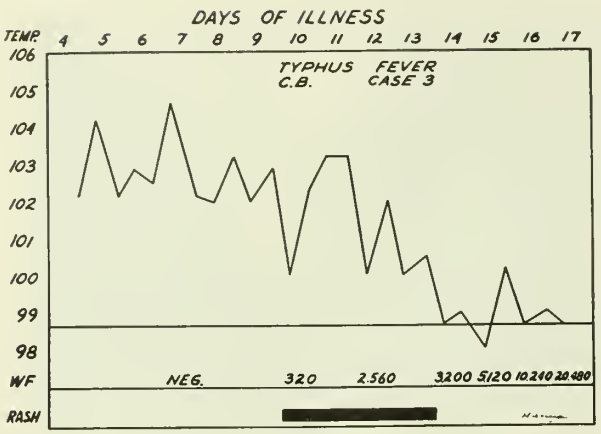


Fig. 3.

chest and upper arms. Several areas later became ecchymotic, then pigmented. He also developed evidence of acute tracheobronchitis. Recovery was complete by March 14, 1946. Blood drawn on March 2, 1946, was examined at the National Institute of Health Laboratory, and was reported as agglutinating Proteus OX19 with a titer of 1:640, and as giving a positive complement fixation test for endemic typhus in a titer of 1:128. Figure 4 shows the course of the temperature, Weil-Felix tests and the rash.

Case 5. W. O., white male, aged 20, was admitted on July 25, 1946. He complained of chills, fever and aching joints of six days duration. There had been mild headache and diarrhea and a rash developed on the day of admission. He was employed in the same feed mill as was the preceding patient and had not been out of Kansas City for several months. Physical examination showed evidence of an acute febrile illness and a discrete, fine, macular rash over the abdomen, thorax and shoulders. Laboratory data: Hb. 77 per cent; white blood cells 21,950 (88 per cent polymorphonuclears, 10 per cent lymphocytes, 2 per cent monocytes). Urinalysis: normal. Recovery was complete by August 3, 1946. Temperature, Weil-Felix reactions, and the course of the rash are shown in figure 5.

Case 6. C. W., white male, aged 53, was admitted on September 12, 1946. Two days before, he developed generalized aching, followed by a severe chill. Frontal headache ensued and there were two more chills. At the time of admission he had headache, generalized aching, weakness, anorexia and constipation. He was a clothes presser, was not aware of rat contacts and had not been out of Kansas City for six months. Physical examination was normal except for the febrile reaction. Laboratory data: Hb. 87 per cent; white blood cells 4,950 (84 per cent polymorphonuclears, 14 per cent lymphocytes, 2 per cent monocytes). Urinalysis: trace of albumin and 5 to 7 red blood cells per high power field. He was severely ill for ten days. On the eighth day he developed a pale red, macular rash on the abdomen, thorax and shoulders. One small ecchymotic area appeared. Recovery was complete except for fatigue by October 1, 1946. The course of the temperature, Weil-Felix tests and rash are shown in figure 6. Blood drawn on September 27, 1946, was examined at the National Institute of Health Laboratory and was found to be positive for Proteus OX19 in a titer of 1:2560, and to give a positive complement fixation test for endemic typhus of 1:512.

Case 7. V. M., white male, aged 32, was admitted on November 19, 1946. He complained of headache, pain in the ankles, fever and weakness of nine days duration. He was a welder and there were many rats in the place where he worked. He had not been out of Kansas City for several months. Physical examination showed an acutely ill, febrile patient, with a diffuse, fine, red, macular rash on the trunk and extremities. Laboratory data: Hb. 90 per cent; white blood cells 9,500 (67 per cent polymorphonuclears, 33 per cent lymphocytes). Urinalysis: faint trace of albumin. The course of the temperature, Weil-Felix tests and rash is shown in figure 7. Blood drawn on November 26, 1946, was examined at the National Institute of Health laboratory and was positive for Proteus OX19, in a titer of 1:1280, and gave a positive complement fixation test for endemic typhus of 1:512 or higher. Recovery was complete by December 6, 1947.

Case 8. S. W., white female, aged 6, was admitted on August 14, 1947. One week before, she developed fever which persisted and was associated with nose bleeds, abdominal pain and malaise. The day before admission a skin rash developed. She lived in a basement apartment of a house infested with rats. She had not been outside of the neighborhood vicinity for a period of over two months. Physical examination revealed photophobia, conjunctival injection and a diffuse, pale, red, macular eruption over the abdomen, arms and thighs. Laboratory data: Hb. 68 per cent; white blood cells 7,400 and three days later 12,400 (55 per cent polymorphonuclears; 39 lymphocytes, 6 per cent monocytes). Urinalysis: normal. Recovery was complete by August 28, 1947. The course of the temperature, rash and Weil-Felix reactions is shown in figure 8. On August 25, complement fixation test for murine typhus was negative. On September 12, the complement fixation test for murine typhus was positive in a titer of 1:128.

HISTORY AND GEOGRAPHIC DISTRIBUTION IN THE UNITED STATES

A mild type of typhus fever was first reported in New York in 1898 by Brill.[3] This was subsequently shown to be a recrudescense of old world epidemic (louse-borne) typhus.[4,5] In 1913, endemic typhus fever was reported in Georgia[6] and since that time it has been found to have a wide distribution along the Atlantic and Gulf coasts, in southern California, inland as far north as central Tennessee, in Cleveland, Cincinnati, Washington, D. C., and St. Louis.[3,7] Mexican and old world epidemic typhus have occurred in the United States but have never become established.[8] The incidence of murine typhus is increasing in endemic localities.[8,9]

ETIOLOGY

The causative organism is Rickettsia Mooseri.

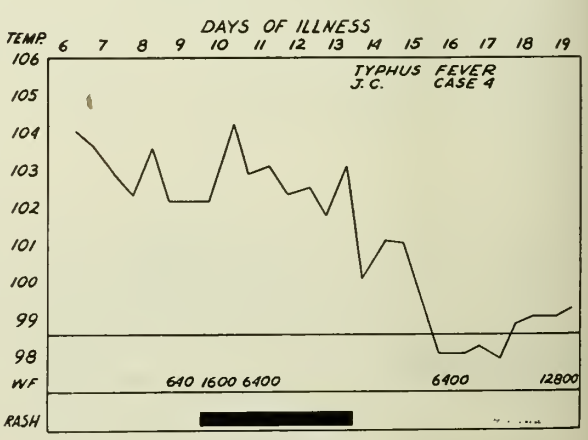


Fig. 4.

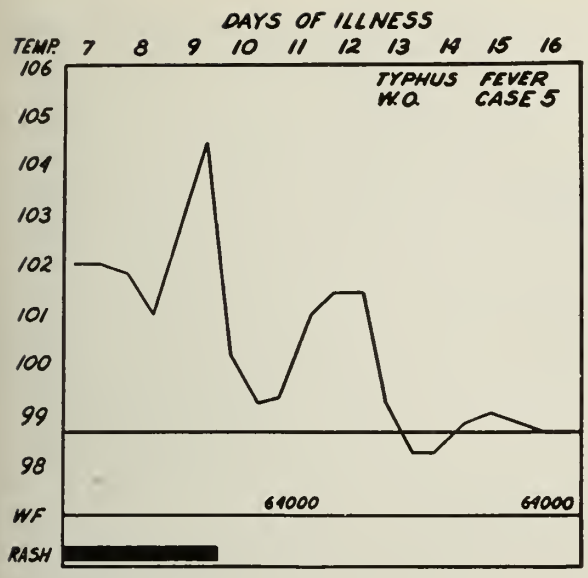


Fig. 5.

Morphologically it is indistinguishable from Rickettsia Prowazeki, the causative organism of epidemic typhus fever, but the two can be differentiated immunologically.

TRANSMISSION

The natural reservoir is in the common rat and possibly in other rodents. Rat fleas and lice transmit the disease among rats. Human infections probably occur through the medium of rat urine and the feces of rat fleas, by inhalation, ingestion or through broken skin.[3,8,9]

CLINICAL FEATURES

Seasonal Incidence.—Most cases occur in the summer and fall, which coincides with the peak rat population and activity. All except one of our cases occurred in these seasons.

Race.—It is generally thought that the white race has a higher infection rate, but in two large series of cases reported recently there was no significant difference in incidence in white people and Negroes.[8,9]

Sex.—Males are more frequently infected than females, probably due to increased exposure. Six of the eight cases were males.

Age.—No age group is immune, but again probably due to increased exposure, the disease predominates in the age groups of 20 to 40 years. In this series, the age range was from 6 to 53 years, with an average of 32 years.

Incubation Period.—The incubation period is thought to be from eight to twelve days, with extremes of four to fifteen days.[3,8]

Onset.—The onset is usually abrupt but in a considerable number of instances there is a prodromal period of a few days during which time the patient may have malaise, headache, anorexia, nausea, cough and coryza. The abrupt onset is heralded by chills, fever, severe headache, weakness, nausea and vomiting. All of our patients reported had chills, fever and headache. Three had weakness and aching. Cough, anorexia, nausea and vomiting each occurred twice, and diarrhea, constipation, epistaxis and abdominal pain were each present once.

Rash.—The rash usually appears between the fourth and sixth days but occasionally is seen from the second to the ninth day. It is observed in about 65 per cent of the cases and is far more commonly seen in whites than in Negroes.[8,9] At its onset the rash consists of small red macules or papules which blanch on pressure, but which soon become petechial and darker. The rash usually disappears during defervescence, but occasionally leaves pigmented areas for weeks. The rash begins on the upper arms, chest and abdomen and spreads peripherally, but usually does not involve the face and neck, and only occasionally the palms and soles. In this series, the rash was present in seven out of eight cases, and the onset occurred from the seventh to tenth days.

Fever.—Shortly after the abrupt onset, the fever becomes high, reaching its maximum by the end of the first week. It frequently shows morning remissions. The decline to normal is usually by lysis and is nearly always complete in uncomplicated cases by the sixteenth day. The average peak temperature was 104.5 F., occurring on the ninth day, and becoming normal after 14.7 days on the average.

Other Findings.—Evidence of respiratory tract involvement is commonly present, and signs less commonly observed are prostration, delirium, coma, nose bleed, conjunctival injection, photophobia, hepatomegaly and splenomegaly, constipation and diarrhea. The pulse rate is usually not more than 120, and a rate of more than 130 is a bad prognostic sign.[3] Blood pressure is usually normal or low. Cardiac insufficiency and peripheral circulatory failure occasionally are seen in severe cases.

COMPLICATIONS AND THE PROGNOSIS

In addition to the circulatory complications, uremia, pneumonia, otitis media and decubitus ulceration occasionally are encountered in severe cases. In a nonfatal case, recovery is complete and there

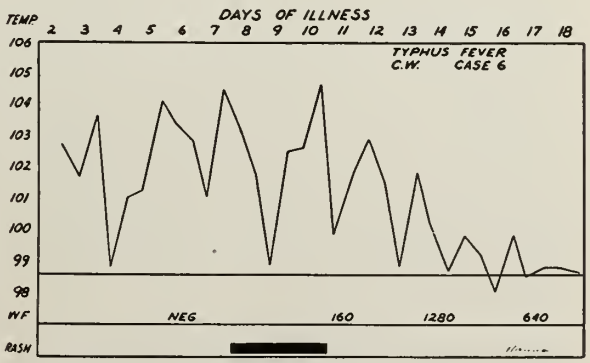


Fig. 6.

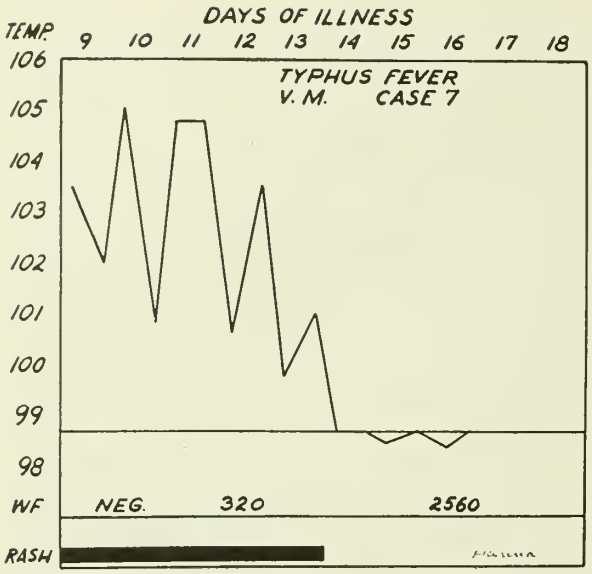


Fig. 7.

are no recognized permanent sequelae. In two large reported series, there were no deaths in 180 cases[8] and one death in 126 cases.[9] These mortality figures, however, are probably too low, as the criteria for diagnosis in the reported series were extremely rigid and the reports did not include several cases which were fatal and were clinically thought to be typhus fever, but which did not meet all the criteria for diagnosis. Deaths from murine typhus are almost invariably in the elderly. Only one of our patients was considered to be seriously ill, and there were no deaths or complications encountered.

DIFFERENTIAL DIAGNOSIS

From other Rickettsial diseases encountered in the United States, the most difficult differentiation is with Rocky Mountain spotted fever. Dyer[3] states that clinical differentiation cannot be made until the rash appears. In Rocky Mountain spotted fever, the rash usually appears on the third or fourth day; is at first evanescent and then severe. It appears first on the wrists and ankles and spreads to the legs, arms, chest and, lastly, to the abdomen, and frequently involves the palms, soles and face. The fever of Rocky Mountain spotted fever most commonly persists for about twenty-one days. The Weil-Felix reaction is of no differential help, but complement fixation tests will differentiate the two diseases. Other diseases which cause difficulty in differential diagnosis include measles, meningococcemia, pneumonia, malaria, pyelonephritis, typhoid fever and drug rashes. Inasmuch as most of our patients received sulfonamides before the diagnosis was established, drug sensitivity was the differential diagnosis which gave us the most concern.

LABORATORY FINDINGS

Blood Picture.—The hematologic findings in our eight cases of typhus fever were not significant. In one case the hemoglobin was 50 per cent, another 68 per cent, four showed values of between 80 per cent and 90 per cent, and two had readings above 90 per cent. The white cell count ranged between 4,950 and 21,950, with an average white cell count of 11,670. In five patients, the counts were below 10,000, while in three, the counts were above 10,000. The differential counts in seven were within normal limits, and in only one (case 1) was there a lymphocytosis. We did not see the increased number of unsegmented polymorphonuclears in the early stages of the disease and, with the exception of one case, did not find a lymphocytosis in the convalescent stage. The presence of leukopenia or leukocytosis did not rule against the diagnosis; the differential count was not of significance in the diagnosis. The increased number of "speckled lymphocytes" reported in some cases[10] was not observed.

Urine Findings.—The urine findings were normal in four cases, while in four there was a trace to 1+ albumin. Only one case showed red cells in the microscopic examination. The urinary findings disappeared with convalescence.

Weil-Felix Reaction.—Agglutinations with the strain of Bacillus Proteus OX19 were carried out on all patients; and in addition agglutinations with Bacillus Proteus OX2 and OXK were used in the last five patients. In one case agglutinations were done on the fifth day, being positive in a dilution of 1:160. Four cases were negative (cases 3, 6, 7, 8) on the seventh, sixth, ninth and ninth days of the disease respectively, but all of these became diagnostically positive as the illness advanced. The agglutination titers became significantly elevated in two cases on the eighth and ninth days (cases 1, 4) but, as a rule, significant titers did not appear until the latter part of the second week of the disease.

The highest titer found with OX19 was 1:80,000 (case 1), which appeared on the twelfth day of the disease. The average high occurred about the fourteenth day, and began to fall about the seventeenth day, although in two cases the titers remained high (case 5), or were increased (case 3) on the sixteenth and seventeenth day of the disease respectively. The most valuable aid in the diagnosis was the rising titer during the first two weeks of illness, showing either a gradual or an abrupt in-

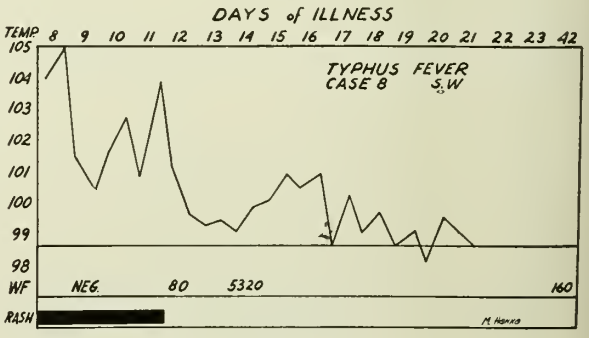


Fig. 8.

crease over low titers (cases 1, 4), or negative titers (cases 3, 6, 7, 8) on first examination. Two cases showed significant elevations on the first examination (cases 2, 5), but these cases were in the tenth and eleventh days of the disease.

OX2 and OXK agglutinations were carried out on the last five cases. The OX19 was always of higher titer in all cases except one (case 8). The titers for OX2 and OXK were generally increased. The titers for OX2 were generally higher than OXK, but in one instance (case 7), the OXK titer on the sixteenth day was higher than OX2. It did not seem that endemic typhus, Rocky Mountain spotted fever and scrub typhus could have been differentiated on the basis of the results of the various Proteus agglutinations.

The diagnostic levels of OX19 agglutination titers are cited in standard texts, and arbitrary "diagnostic levels" of 1:80 and 1:160 are suggested. The clinician invariably asks the pathologist whether or not a diagnosis can be established with OX19 agglutination levels of 1:80 or 1:160 and, in many cases, is disappointed when this question must be answered in the negative. No definite levels of the agglutination titer can be given above which the diagnosis can be established and below which the diagnosis is questionable. The cross agglutination reactions that may occur with OX19 in brucellosis, measles, respiratory tract infections, dysentery and other febrile conditions, all of which may show nonspecific increase in agglutination titers, prevents the positive acceptance of diagnostic agglutination levels for typhus fever. One recent case in Kansas City Municipal Hospital, with an OX19 agglutinating titer of 1:1280, in which laboratory and clinical studies suggested a diagnosis of brucellosis, illustrates the danger of "establishing" a diagnosis on single determinations in which high OX19 agglutination titers are obtained. The rising OX19 titer during the second week of the disease, determined by repeated tests, constitutes the best evidence of typhus fever when using the nonspecific Felix-Weil reaction.

Complement Fixation.—Within the last few years, the diagnostic use of a complement fixation test for endemic typhus has been made possible because of improvement of the methods of cultivating Rickettsia for use in preparation of the antigen. The technic of the test has been described in detail[11] and comparisons with the Weil-Felix test have been made.[12] The sera of four (cases 4, 6, 7, 8) of our eight cases were tested by complement fixation. All were found positive and the positive results confirmed by the National Institute of Health. The complement fixation test is more specific than the Weil-Felix reaction, and stays positive for longer periods of time although it does not become positive in most instances as early as the Weil-Felix agglutination tests.

Other Diagnostic Aids.—Intraperitoneal inoculation of male guinea pigs with 5 cc. of patient's blood is a valuable aid in diagnosis, and is particularly of value in the differential diagnosis between endemic typhus and Rocky Mountain spotted fever. Blood from two of our patients, taken on the tenth and twelfth days of the disease respectively, were injected into guinea pigs. The results were negative in both instances. Guinea pig inoculation must be done during the early days of the disease while the Rickettsia are present in the blood stream. Thus, while of value, the fact that the test is positive only during the first week of the disease usually precludes its aid in diagnosis since most patients present themselves for treatment during the first part of the second week of their disease.

Skin biopsy has been reported as of value, in experienced hands, in the diagnosis of typhus fever by the demonstration of Rickettsia in the endothelial cells. Biopsies were not taken in any of our patients.

Blood cultures may be positive during the first week of the disease. Two attempts to culture Rickettsia were made in our cases, one during the tenth day and one during the twelfth day of the disease; both were negative. Bone marrow biopsy and cultures were not done.

Rickettsia Slide Agglutination.—We did not have the opportunity to use the Rickettsia slide agglutination tests as have been described.[13,14]

TREATMENT

The treatment of murine typhus fever is the same as that of the more severe epidemic typhus fever. The essential points in the management are still nonspecific measures. Bed rest is readily acceptable to the patient during the febrile state and should be carried out. Careful nursing attention should be given to the skin and mucous membranes. An adequate intake of essential food elements is important, and riboflavin in excess may be of value.[8] The fluid intake must be kept high. It is no longer felt that intravenous fluid administration is contraindicated and this is the preferred route if oral intake is inadequate.[15] Sedatives and analgesics are necessary on many occasions. Atabrine, quinine and penicillin are without effect.[8,9] Sulfonamides in experimental animals have an injurious effect[16] and should not be used unless other indications arise. Penicillin may be of some value in the prevention of secondary infection.[16] In the treatment of peripheral circulatory failure, digitalis is of no value. Plasma should be used and chemical imbalances should be watched for and corrected.[15] Concentrated hyperimmune rabbit serum has been used with some results in epidemic typhus[17] but we are not aware of its use in murine typhus.

Recently, para-amino-benzoic acid has been used in the treatment of Rickettsial diseases. Good results have been obtained when adequate dosages were administered fairly early in epidemic typhus fever,[16,24] in Rocky Mountain spotted fever[18,19] and in Tsutsugamushi disease.[20] That a similar effect may be expected in murine typhus is indicated by the report of Smith[21] who used 2 gms.

of para-amino-benzoic acid every two hours until the temperature became normal. His treated patients had fever for an average of 10.3 days, and the controls for an average of 13.2 days. Para-amino-benzoic acid apparently inhibits the proliferation of the intracellular Rickettsia.[16,19] It is rapidly excreted and must be administered as often as every two hours. It induces vomiting unless given with sodium bicarbonate. Blood levels should be determined and levels which have been used are from 10 to 50 mg. per cent. Snyder et al[24] have recently summarized their opinions regarding the use of para-amino-benzoic acid. For typhus fever, they recommend a blood level of from 10 to 20 mg. per cent; for Tsutsugamushi fever and Rocky Mountain spotted fever, from 35 to 40 mg. per cent. Blood levels can be determined by the Bratton and Marshall sulfonamide method[22] as modified by Eckert.[23] The blood levels vary according to the urinary output[18] and the dose should be reduced when there is marked oliguria.[16] Two grams every two hours is usually safe but is probably not the maximum effective dose. The drug is best administered in tablet form[18] and should be given with 5 per cent sodium bicarbonate solution. Para-amino-benzoic acid can be given intravenously or intramuscularly.[18] The drug should be used until the temperature is normal for one to two days. The occasionally noticed toxic effects are: leukopenia, drowsiness, disorientation, acidosis and abdominal distention.[16,19] The drug should be stopped if the white count drops below 3,000. Hepatic and renal insufficiency may increase the toxicity.[21] The drug should not be given concurrently with sulfonamides.

PROPHYLAXIS

Rat control is the only measure of value. Immunization against epidemic (old world) typhus has no effect in preventing murine typhus.[25]

RESULTS OF RAT SURVEY

After the first cases of typhus had appeared, the question arose as to whether the disease was appearing in patients who had contracted the disease elsewhere, or whether the disease was appearing for the first time in Kansas City. Through the cooperation of the Sanitation Division of the Kansas City Health Department, the services of the U. S. Public Health Service were enlisted, and a rat survey was outlined to include the areas in which some of our patients were employed. The complete results of this survey have not been completed and tabulated but a brief summary of the results at this time is significant.

A total number of 433 rats were trapped, and of these 410 were combed and bled. Of these, blood from 397 rats was satisfactory for examination and was tested for antibodies by the use of the complement fixation test. During the first part of the survey, all rat sera were sent to the U. S. Public Health Service for testing, but later were tested in our laboratory, and confirmatory tests obtained from the U. S. Public Health Service. Blood from seventy-one rats, or 18 per cent (of 397 animals) showed positive complement fixation tests; anticomplementary reactions were obtained in sixteen. A total of eighty-six establishments were investigated, and in fourteen, infected rats were found. One establishment, a feed mill, where two of our patients were employed (and where a third patient contracted the disease but was treated elsewhere,[26]) showed 90 per cent of rats to be infected. This, ironically, was the only establishment which in any way attempted to control the rat population and the attempted rat control probably was responsible for the high percentage of infected rats and for the high number of human cases appearing among the employees. Their rat control program consisted of cyanide fumigation over the week end, with "50-75 rats being killed every week." It is well known that the rat flea will not leave its warm host, but when that host dies, and cools, the fleas desert the dead animal. They then seek another host, thus providing an opportunity for a greater number of rats to become infected. Occasionally the flea will accept a human host if forced to desert its preferential host—the rat.

Although the results of this survey are not complete, the evidence obtained from the early work establishes the fact that there is a significant infection in rats and that it was possible for our patients to have contracted the disease locally. This was suspected by the histories of our patients in regard to their travel for only one had been out of the Kansas City area during the incubation period of the disease. Since there had been no cases of typhus reported prior to October of 1945, it is within reason to assume that the infection of the rat population in areas in which positive reacting rats were found appeared shortly before that time.

CONCLUSIONS

1. Eight cases of typhus fever, most likely contracted in the Kansas City, Missouri, area are reported and a brief résumé of the clinical and laboratory findings is presented.

2. A survey indicates that there is a significant murine typhus fever infection in the rat population in localized areas in Kansas City, Missouri.

Municipal Hospital No. 1.

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BENIGN POLYP OF THE JEJUNUM CAUSING UNEXPLAINED HEMORRHAGE

CASE REPORT

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A RARE INSTANCE of severe hemorrhage from the gastrointestinal tract is presented. Although a preoperative diagnosis of probable tumor or diverticulum of the jejunum was made, the exact diagnosis and location of the lesion was not established until after the successful removal of a benign adenomatous polyp of the jejunum.

Because of the rarity of such tumors, early and mild symptoms of small intestinal neoplasms are often considered to be of functional origin and valuable time is lost in treating the patient.[1] Persistent melena, for which no other cause is found, is an indication for surgery, particularly if there are clinical and radiologic signs pointing to a localized lesion. The lesion may be in the bowel wall or in the lumen, as in the present case.

Jones[2] recently has emphasized the fact that the small intestine may be a "blind spot" in roentgen diagnosis. Roentgen studies are of little value in early lesions of the small intestine except in cases of obstruction. Bockus[1] reports an incidence of only 0.16 per cent for benign tumors of the small intestine in more than 34,000 autopsies. Lesions of the jejunum are rarer than those of the ileum and duodenum.[1] Miller and Bell found thirty-eight instances of sarcoma of the small intestine in 117,357 cases, an incidence of 0.03 per cent.[1,3] Myosarcomas and fibrosarcomas occur less frequently than lymphocytomas.[1] Jones and Brubacher[4] reported twenty-two patients with tumors of the small intestine with only one instance of leiomyosarcoma. Among four additional cases in which roentgen examination was normal, there were two instances of ulceration of a Meckel's diverticulum.

From the Department of Medicine, Washington University School of Medicine, and the Barnes Hospital, St. Louis.

CASE REPORT

An 18 year old, white, single, college girl was told, after a routine precollege examination in September 1945 that her hemoglobin was 46 per cent. Her only complaint had been slight dizziness on climbing stairs. In October 1945 she felt weak and dizzy and, on one occasion, fainted. There was mild diarrhea for two days, but no definite knowledge of blood in the stools. Menstrual history was not of consequence. Because of a suspected mild respiratory tract infection with temperature 102 F., she had been given penicillin, and the temperature remained normal after the second day of treatment. At that time her red blood cell count was



Fig. 1. Special roentgenogram of small intestine taken four hours after the ingestion of barium, showing intraluminal filling defect in the jejunal loop lying over the body of the fifth lumbar vertebra.



Fig. 2. Gross specimen removed at operation.

1,380,000 and the hemoglobin was 4.2 grams (27 per cent). The urinalyses, erythrocyte fragility tests and gastric analyses were all normal, but five stools were positive for occult blood and one was tarry black in color. Roentgen ray examination of the gastrointestinal tract was said to have been entirely normal. She was given six whole blood transfusions (500 cc. each) and her hemoglobin rose to 82 per cent.

Approximately fourteen months later (November 17, 1946) the patient was admitted to Barnes Hospital for further study. At that time there were no localizing signs or symptoms. There had been a steady weight gain during the previous year. The patient had had an appendectomy at the age of 13 and a tonsillectomy and adenoidectomy at age 7. The family history was noncontributory. Physical examination was essentially normal. Laboratory studies revealed a mild, normocytic, normochromic anemia; platelets were normal. Urinalysis, urobilinogen tests, bleeding and clotting times, test for cold agglutinins, erythrocyte fragility and blood Kahn tests were all normal. Complete roentgen ray examination of the gastrointestinal tract was negative. Stool examinations were repeatedly negative for ova and parasites, but several were positive for occult blood. The blood nonprotein nitrogen, total and fractional serum proteins, cephalin cholesterol flocculation tests, agglutination tests for typhoid fever, undulant fever and tularemia, and blood chlorides and calcium determinations were all normal. The electrocardiogram likewise was normal. Exploratory laparotomy was deferred. Thyroid, grains 2 daily, has kept her basal metabolism normal the last few years.

Two weeks before the second admission to Barnes Hospital on January 19, 1947, the patient had a weak spell after five or six loose stools following an enema for constipation. The hemoglobin was 78 per cent after a transfusion of 1000 cc. of whole blood.

At the time of the second admission to Barnes Hospital the patient again had no localizing signs or symptoms. She was put on a meat-free diet, and daily stool specimens were tested by the guaiac method for twelve days. Seven stools were positive and five negative. None was grossly bloody or tarry. No amebae or other parasites were found. Complete roentgen ray examination of the gastrointestinal tract was indeterminate for the second time. Oral cholecystograms were normal. Because a gastrointestinal lesion was still suspected, special studies of the small intestine were made on January 22, 1947. A small amount of barium remained in the small intestinal area and right upper quadrant and was not passed into the large intestine in a normal fashion. The initial jejunal forms were over-distended moderately without demonstrable fluid levels or definite evidence of an obstructive lesion. On January 27, 1947, further studies, four hours after barium was given, revealed an intraluminal filling defect in the jejunal loop.† (Figure 1.) Since this loop overlay bodies of the vertebrae, it was hard to distinguish the lesion from a pressure defect. Surgical exploration was agreed upon.

A few hours before the exploratory laparotomy the patient developed slight tenderness and pain across her midabdomen radiating into the left side. There was slight tenderness to deep pressure to the right and one inch above the umbilicus, where a golf-ball sized mass was felt momentarily by ballottement. There was no muscle spasm.

At operation there was found a pedunculated benign papilloma of the jejunum, four inches from the ligament of treitz. The tumor was the size of a walnut and was associated with early intussusception which was reduced. The involved portion of the jejunum was resected and an end to end anastomosis was made. There was dilatation of the jejunum from a point twenty-four inches from the ligament of Treitz.* Pathologic study of the specimen revealed a benign adenomatous polyp of the jejunum. (Figures 2 and 3.) The postoperative course was uneventful and subsequent reports indicate that the patient has continued to be well.



Fig. 3. Microscopic section of tumor showing hyperplastic jejunal mucosa of normal adult type. The cells are all regular and appear to be normal; there is no inflammation or invasion of the muscularis. (Charles Eckert, M.D.)

3720 Washington Boulevard.

†Described by Dr. J. A. Larimore.
*Operation by Dr. Glover Copher.

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URINE VS. BLOOD SERUM IN FRIEDMAN'S TEST FOR PREGNANCY

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VARIOUS LABORATORY tests for the early diagnosis of pregnancy have been described. To date none have proved as valuable as the Friedman modification of the Ascheim-Zondek test. When all steps are carried out, this test is reported as 98 per cent accurate. This includes obtaining a fresh, first morning, fasting specimen of urine which is injected intravenously into a virgin female rabbit of not less than four pounds weight, after adjusting the reaction of the urine to a pH between 6.8 and 7.4. Furthermore, the urine must be collected in a chemically clean container and, if cloudy due to the presence of bacteria, must be detoxified. Therefore, it must be apparent that the test as carried out in most laboratories dealing with ambulatory patients is less than 98 per cent accurate as there is too much chance for error in procedure some place along the line.

Frequent causes of error are: (1) The patient drinks water after midnight and before the fasting specimen is voided, thereby diluting the hormone necessary to produce a positive test. (2) Delay in taking the specimen to the laboratory, thereby allowing dissipation of the hormone present and leading to excessive bacterial growth in the urine. (3) Use of containers that previously have contained anything from hair tonic to nail polish remover with the result being a dead rabbit and the test must be repeated. (The best container for home use is a clean Mason jar.)

Recently Hoffman has suggested the use of blood serum rather than urine for the test. The advantages of this method are obvious. The blood may be drawn at any time of day as blood is not subject to dilution by the intake of fluids. The laboratory taking the blood knows that it is fresh whereas the urine specimens frequently are old. Also it obviates having the patient place the specimen in an unsuitable container. An additional advantage is that this method frequently saves the patient an extra trip to the laboratory.

There has been some question as to the relative accuracy of the two methods. One Kansas City obstetrician stated that the serum method was of no practical value in that a large percentage of false negative results were obtained. This led me to explore this laboratory's records for the last year and try to answer this question.

During the last year this laboratory has performed 156 Friedman Tests with the following results:

	No. Positive	No. Negative	Per Cent Positive
156 Friedman Tests			
81 Urine Tests	33	48	40.7%
75 Blood Serum Tests	41	34	54.6%

False positive tests are rarely a problem; it is the false negative tests that gain disrepute for the laboratory performing the test.

It must be apparent that the blood serum test is somewhat more accurate then the urine test as performed in the average laboratory. With the errors in the collection of urine specimens entirely eliminated I believe the two figures would coincide, but that is a Utopia that the average laboratory could not reach when dealing with ambulatory patients.

From The Clinical Laboratory, Kansas City.

1306 Bryant Building.

SAY INFLUENZAL MENINGITIS IS TREATED BETTER WITHOUT SPINAL PUNCTURE

Recovery from influenzal meningitis is more prompt and complications are fewer when treatment by spinal puncture is omitted, according to two doctors in the February 28 issue of *The Journal of the American Medical Association.*

The writers are Archibald L. Hoyne, M.D., and Rowine Hayes Brown, M.D., from the Municipal Contagious Disease and Cook County Disease Hospitals, Chicago.

Influenzal meningitis is a type of inflammation of the three membranes which envelop the brain and spinal cord. It is caused by an influenzal virus, but its symptoms resemble those of other types of bacterial meningitis.

Rare in adults, the disease was formerly almost universally fatal. The sulfonamide compounds, specific anti-influenzal serum and streptomycin have all made the picture more optimistic, but even today there is no standard accepted for their application. Many doctors still believe that numerous spinal taps for drainage are necessary even after diagnosis has been established by spinal tap. Furthermore, when the National Research Council released streptomycin for treatment it advised that the new antibiotic be injected by spinal puncture.

The Chicago doctors' conclusion is based on a dozen years of experience in the treatment of meningitis. In their article they report specifically on 14 consecutive patients with influenzal meningitis treated at the County hospital in 1946 and 1947 and 16 consecutive patients treated at the Municipal hospital in 1946. There was only one death in each group, and in both of the fatal cases the patients had been given streptomycin by spinal puncture as well as intramuscularly. On the other hand, 23 of the 28 patients who recovered had received no treatment by spinal puncture after diagnosis. These 23 had been given streptomycin intramuscularly, had been treated with serum, or had received sulfonamide compounds—sometimes all three.

"The primary purpose for a lumbar puncture should be to establish a diagnosis," Dr. Hoyne and Dr. Brown conclude.

PYLORIC OBSTRUCTION DUE TO GASTRIC DIVERTICULUM

REPORT OF A CASE

J. G. PROBSTEIN, M.D., *St. Louis*
AND
LEO A. SACHAR, M.D., *St. Louis*

REPORT OF CASE

L. U., a 62 year old female, entered the hospital September 30, 1946, complaining of cramping epigastric pain coming on after meals. This complaint had been present for two years during which the patient had lost thirty pounds. The pain was not relieved nor aggravated by any particular food or alkali. Two months before her entry into the hospital the patient began to have frequent episodes of vomiting and diarrhea. After two weeks the diarrhea stopped, but the vomiting and epigastric pain continued. There was a marked loss of appetite, with the patient's weight dropping rapidly.

Physical examination revealed only evidence of weight loss.

The significant laboratory findings on entry were a red count of 3.76 million, hemoglobin 70 per cent of normal (Haden-Hausser), and a serum albumen concentration of 3.6 grams per cent.

On October 4 a roentgen-ray examination after a barium meal showed "a small pocket in the antrum of the stomach which is suggestive of a small diverticulum." Eleven days later the patient was gastroscoped by Dr. H. Scheff. No lesion could be seen in the antrum corresponding to the roentgen-ray findings. On October 22, the patient was reexamined by roentgen-ray. The roentgenologist reported "a small constriction in the prepyloric portion of the stomach which normal peristaltic waves do not pass." Spot films were taken (Fig. 1).

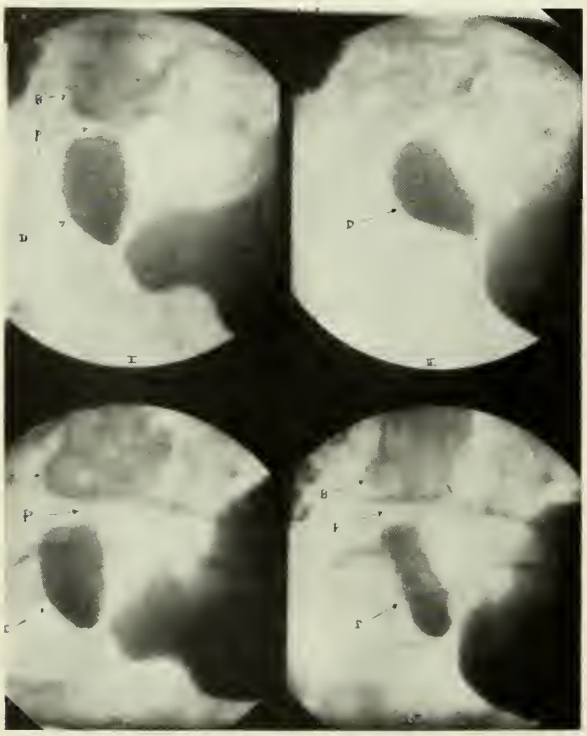


Fig. 1. Serial compression spot films of the prepyloric portion of the stomach. "The diverticulum (D) of the prepyloric portion of the stomach is seen in various phases of peristaltic activity. The diverticulum lies on the greater curvature side, external to the channel of the stomach, and takes no part in the peristaltic activity, as indicated in IV. With antral systole the diverticulum becomes narrowed and elongated. The duodenal bulb (B) appears entirely normal. The pylorus (P) is slightly elongated. At no time during the course of the examination does the prepyloric portion of the stomach distend to its normal size, apparently because of encroachment by the filled diverticulum upon the adjacent gastric channel." (Dr. H. Senturia.)

During the period of diagnostic investigation the patient was treated by gastric lavage with residuals of from 300 to 400 cc. of fluid containing old food being obtained each time. No free acid was found in the stomach.

On exploration on October 30, the pylorus was felt to be thickened. The stomach was opened. The pyloric opening into the duodenum admitted only the tip of a Kelly clamp. It was thought that the patient had an idiopathic hypertrophy of the pylorus. A Hofmeister type of gastric resection was performed.

The patient made an uneventful recovery and has remained asymptomatic.

PATHOLOGIC REPORT

"The specimen consists of the pyloric end of the stomach, measuring 10 centimeters in length. The stomach has been partially opened, but the pylorus remains intact. The stomach is dilated, flaring out sharply in all directions from the tiny (0.8 mm.) pyloric opening. When cut open and laid flat, the pylorus measures 2 centimeters in width. The mucosa of the stomach shows a cobblestone appearance. From the duodenal side of the pylorus is an inpouching extending into the gastric wall, apparently through the submucosa for a distance of 1.2 cm. The opening is somewhat puckered (see fig. 2). Section through the narrowed pylorus shows the mucosa thickened with a slight increase in fibrous tissue and small vessels. Section through the diverticulum shows it lined by regular gastric mucosa, around which is a muscularis mucosa." (See fig. 3.)

DISCUSSION

The nature of the diverticulum which produced the obstruction is not clear. We have considered the possibility of its being a duodenal diverticulum, reduplication of the stomach, a traction diverticulum following a peptic ulcer or a gastric diverticulum. It has differentiating features from typical examples of all of these.

Since the opening of the diverticulum in this case is in the duodenum, it might be considered as a duodenal diverticulum. However, the majority of duodenal diverticula are in close relationship to the major and minor duodenal papillae. Horton and Mueller[2] in an analysis of 145 duodenal diverticula found not a single one in the first portion of the duodenum. Moreover, in every instance the duodenal diverticulum either penetrated or lay against pancreatic tissue. There was no pancreatic tissue adjacent to the diverticulum in this case. Finally, we have not found any report of a duodenal diverticu-

From the Department of Surgery, Jewish Hospital, and Washington University School of Medicine, St. Louis.

Aided by the Louis M. Monheimer Memorial Fund.



Fig. 2. Cobblestone appearance of the stomach and inpouching into the gastric wall.

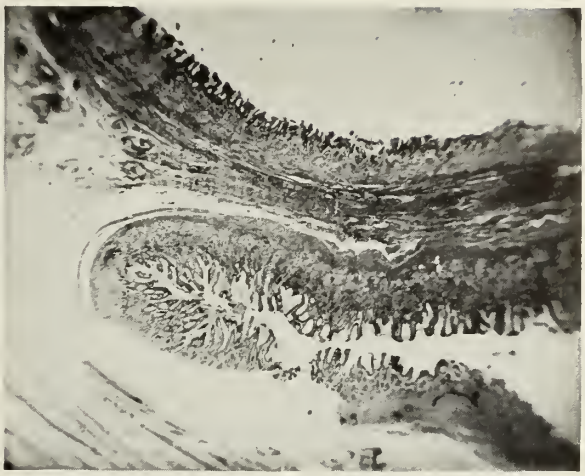


Fig. 3. Section through the diverticulum.

lum passing into the wall of the stomach as this one did.

Gastric reduplications are cysts or diverticula characterized by the possession of mucosa similar to that of the stomach, a smooth muscle coat and strong adherence to the stomach so that there is no plane of cleavage between the two. The diverticulum in this case had no muscle coat of its own. It bore no resemblance to the cases of reduplication cited by Hudson,[3] or the cases of Ladd and Gross,[4] and Farraro,[1] or an unpublished case which we have recently seen at Homer G. Phillips Hospital. There was no remnant of stomach proximal to the diverticulum which, if found, might have indicated that this was the persisting distal portion of a reduplication, the remainder of which had become atretic.

Occasionally pouchings, folds or niches are brought about by infections, neoplasms or ulceration in the gastric or duodenal wall. Some are associated with the pull of adhesions. Any process producing adhesions and scar tissue may distort the wall so as to form a diverticulum. All the coats of the bowel participate in these so-called acquired diverticula. There was no scarring in the immediate vicinity of the diverticulum in this case.

Reviews of gastric diverticula have been written by Jay Martin[5] and by Rivers, Stevens and Kirklin.[6] The primary differentiating characteristic of the diverticulum in this case was the fact that the ostium was in the duodeum. This diverticulum did not protrude from the stomach, but rather grew into the wall of the stomach. In the ninety-two cases reviewed by Martin, mention is not made of a similar case. Rivers, Stevens and Kirklin reported ten cases of gastric diverticula in 11,234 exploratory operations on the stomach. Only one case had vomiting which could be clearly attributed to the gastric diverticulum. Six of the cases reported were adjacent to the pylorus. In the wall of the diverticula all layers were present but thinned out. Despite these differences, the mucosa of the diverticulum we have described was like that of the stomach, though not as thick, and for this reason it seems most likely that it is a variant of the more common diverticula.

Finally, we have considered the possibility of this diverticulum having arisen from a bit of redundant gastric mucosa, which probably invaginated as a result of intrapyloric pressure until a well formed diverticulum was produced.

SUMMARY

An unusual case of pyloric obstruction caused by a diverticulum extending deep to the pyloric mucosa is presented.

Its differentiation from other diverticula found in this region is briefly discussed.

4500 Olive St.

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NURSES HANDLING STREPTOMYCIN MAY DEVELOP SENSITIVITY TO DRUG

Nurses, pharmacists, laboratory technicians and others concerned with the administration or handling of streptomycin are in danger of developing a sensitivity to the drug, three doctors state in the February 28 issue of *The Journal of the American Medical Association.*

The writers are Solomon M. Rauchwerger, M.D., Frederick A. Erskine, M.D., and Walter L. Nalls, M.D., from the Department of Medicine and Surgery, Veterans Administration, Oteen, N. C. They report that when over a period of 20 months streptomycin was administered to 233 patients in the tuberculosis hospital at Oteen, N. C., six nurses developed such a sensitivity. In every case the first symptom was a rash on the hands, followed by intense itching. Five of the six nurses also showed involvement of the area around the eye socket. Pyribenzamine proved more effective than benadryl for relief of symptoms.

A CRITICAL ANALYSIS OF RECENT METHODS OF TREATMENT OF THROMBOEMBOLIC DISEASE

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During the last decade medical concept of the thromboembolic syndrome has undergone considerable revision. Because of this it would seem worthwhile to review the origin and pathology of this process and to evaluate critically the results of the present methods of treatment in an attempt to arrive at a practical method of management.

ORIGIN AND EVOLUTION OF THE THROMBOPHLEBITIC PROCESS

It formerly was assumed that the familiar phlegmasia alba dolens (milk leg) took origin in the upper femoral or lower iliac veins. Homans[1] in 1944 pointed out that this assumption must be discarded. Bauer[2] has demonstrated that not more than 10 per cent have their origin in these vessels or in the pelvic veins. He also has contended that 90 per cent of femoro-iliac thrombophlebitis arises in the deep veins below the knee. Frykholm,[3] in a dissection of 133 venous thromboses, observed that 85 per cent were found distal to the profunda in the femoral vein, and most of these were below the knee. The left side was involved more frequently than the right. Bauer[4] has found that in untreated cases thrombosis appeared in the other leg in at least 30 per cent of the cases. This second thrombus also usually starts in the lower leg. Bauer's figures are probably more nearly correct as he studied the thrombotic process early in its course by phlebography, whereas most other investigators have based their figures on postmortem material, by which time it is frequently difficult to identify the exact site of origin.

Therefore, the process of thrombosis usually begins with a clot arising in a deep vein of the leg or foot. Why such a process should take place spontaneously in a vein is not definitely known. The time honored explanations have included stasis, changes in the blood clotting mechanism and damaged blood vessel intima. Once formed, the thrombus propagates, eventually projecting into a large vein of the lower leg and there becomes the nidus for further deposition of platelets, fibrin and other blood elements which make up the blood clot. Thus the clot progresses cephalad and the vein becomes partly filled with a freely waving friable flagellum. This is the condition which entails the greatest risk of embolism. Fortunately it does not generally persist for more than twenty-four or forty-eight hours.[4] Within that time one of two things usually occurs: the waving thrombus may break off at some point giving rise to an embolus either large or small, or it may continue to grow in thickness, block the lumen of the femoral vein, involve the endothelium and become firmly attached throughout its length. The second development is the more common with a typical phlegmasia alba dolens resulting. Perivenous lymphan-

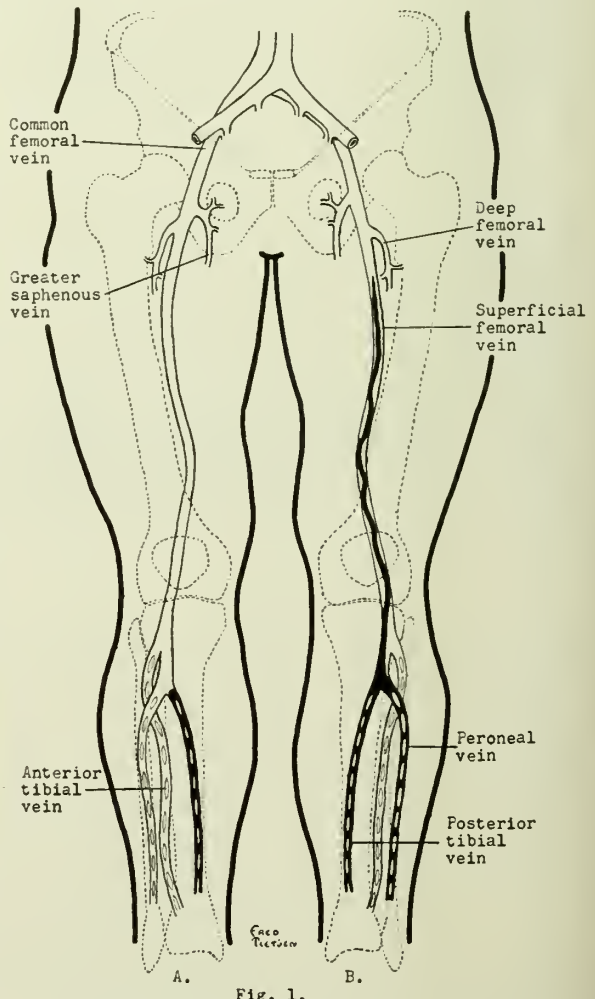


Fig. 1.

Fig. 1. Diagrammatic sketch of the veins of the lower extremities, representing two forms of phlebothrombosis. A. The thrombotic process is early and limited to the calf veins. B. The thrombotic process has progressed into the popliteal and femoral veins. At these stages ligation of the superficial femoral vein would prevent pulmonary embolism. (Compare with figure 2.)

Presented before the medical staff of St. Mary's Hospital, Jefferson City, Missouri.

gitis has been observed by a number of workers. This with the impaired venous return results in stasis, the accumulation of perivascular fluid and exudate, peripheral edema, swelling and pain.

The clinical type depends upon the stage at which the pathologic process is first recognized. If only the lower leg veins are involved the condition termed "phlebothrombosis"[5] exists while, if the entire femoral vein is involved, the condition known as thrombophlebitis is present. Pathologically there are of course many gradations between phlebothrombosis and the fully developed thrombophlebitis or "milk leg" (figs. 1 and 2).

FACTORS INFLUENCING THE INCIDENCE OF DEEP VEIN THROMBOSIS

Age: Allen[6] considers the age of the patient to be the most important factor influencing the frequency and seriousness of thrombosis of the leg veins. Fig. 3 gives the incidence according to age of venous thrombosis at the Massachusetts General Hospital. Meigs and Ingersoll,[7] Veal and Hussey[8] and others also have noted an increasing frequency of venous thrombosis with advancing age.

Injury: Thrombosis following injury has been frequent enough to attract the attention of a number of workers.[9, 10, 11, 12] In twenty-five patients who died following fractured hips, nine showed pulmonary embolism at postmortem examination.[10] Bauer[11] found the incidence of thrombosis in leg injuries was 12 per cent, and 1.6 per cent after surgical operations (one in every sixty patients).

Climate: Allen[6] has noted that the peak incidence of thrombotic disease occurs in the winter months, 32.9 as compared with 18.9 per cent in the summer. He does not know how to account for this difference but suggests that it may be related to the vasospasm which occurs in cold damp weather and the increased frequency of upper respiratory tract infection, both of which might play some role in the production of thrombosis.

Heart: Morton and coworkers[12] have shown that impaired heart action predisposes to thrombosis and pulmonary embolism. Only 8 per cent of the patients with heart disease who suffered a pulmonary embolism survived. Carlotti and coworkers[13] in reporting the incidence of pulmonary embolism in medical patients found that the majority had some form of cardiac disease.

Miscellaneous Factors: Other conditions favoring the development of thrombosis and pulmonary embolism are obesity, dehydration, abdominal distention, varicose vains, prolonged immobilization, infection (present in 75 per cent of embolism),[12] anemia, and hypoproteinemia. Morton and co-workers[12] have found that patients with benign prostatic hypertrophy, uncomplicated hernia, gangrene of the extremities and carcinoma of the colon and rectum have by far the highest incidence of fatal pulmonary embolism. The incidence of venous thrombosis after childbirth has been reported as 1.0 per cent, and in medical patients as 2.1 per cent.[11] Gibbon[14] in an extensive review of pulmonary embolism found that of 100 postoperative deaths, eight were due to pulmonary embolism. Priestley and Barker[15] found that approximately 6 per cent of deaths occurring after major surgical procedures were due to pulmonary embolism.

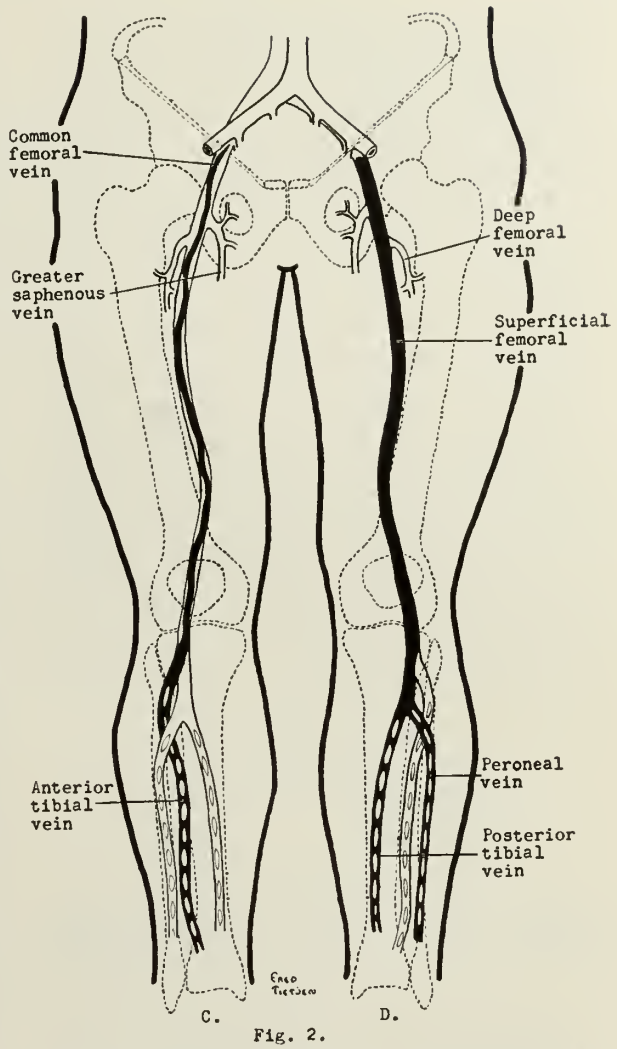


Fig. 2.

Fig. 2. Diagrammatic sketch of the veins of the lower extremities, showing further progress of the thrombotic process. C. The thrombus is shown as a long flagellum floating in the blood stream. At this stage massive pulmonary embolism is threatening. At operation the vein should be opened and the blood clot sucked out before ligation. D. Represents complete occlusion of the femoral vein resulting in the clinical phlegmasis alba dolens. Embolis phenomena are rare at this stage.

SIGNS AND SYMPTOMS

The recognition of phlebothrombosis may be quite difficult as its symptoms and signs are usually minimal. Inspection and palpation of the legs at least twice a day should be carried out. Mild swelling of the ankle, dilation of the superficial veins of the foot, one calf 1 cm. larger than the other, and minor discomfort on palpation of the calf muscles and on dorsal flexion of the foot (Homan's sign) may lead to early diagnosis. If the temperature is slightly elevated along with the pulse and respira-

tion this is suggestive of a small infarct. Homans,[16] in reviewing this subject, found that pulmonary embolism called attention to thrombosis more frequently than any other single sign. DeTakats and Fowler,[17] Homans[1]and others have emphasized the general rule that the more swelling and discomfort there is present, the less the danger that a soft detachable mass exists. Homans states that, if in the presence of a phlegmasia alba dolens embolism actually occurs, one can be reasonably certain that it did not come from the swollen leg but from the other or normal appearing leg. Generally speaking, the more silent the thrombus, the greater its embolizing possibility. The most careful observation for thrombosis and pulmonary emboli should be carried out during the first two weeks following surgery. Morton[12] has found that approximately 80 per cent of postoperative pulmonary emboli occur within that period. While much of this discussion has been related to the postoperative patient, venous thrombosis and pulmonary embolism are frequent in medical patients as well. Carlotti and coworkers[13] have found it more common in medical patients than in postoperative patients.

Table 1. *Incidence of Various Signs in 84 Cases of Deep Thrombosis*
(Modified from Veal and Hussey[8])

Edema	90 per cent
Calf tenderness	96 per cent
Homans' sign	92 per cent
Fever	14 per cent
Tachycardia	21 per cent

Table I lists the incidence of various signs in eighty-four cases of deep venous thrombosis in the lower extremity as found by Veal and Hussey.[8]

DIAGNOSTIC AIDS

Phlebography: According to Bauer[11] the injection of a radio-opaque substance into the veins about the foot or ankle followed by radiologic study of the leg veins is of special aid in diagnosing early phlebothrombosis. Most investigators have found it difficult to interpret the results of the procedure. Variations in the veins and local spasm may lead to errors in diagnosis. In suspected venous thrombosis in which the condition is fraught with such serious consequences one naturally hesitates to spend the time or subject the patient to the manipulation that this procedure entails, especially in view of the difficulty in interpretation. In general the procedure has been discarded.

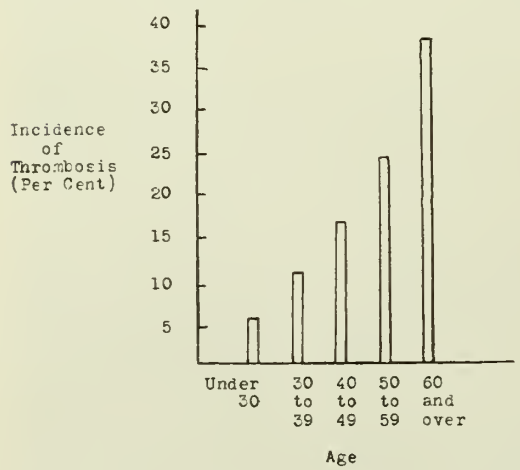


Fig. No. 3. Incidence of Thrombosis According to Age. (Modified from Allen (6))

Heparin Tolerance Test: De Takats and Fowler[17] are of the opinion that valuable information frequently can be gained regarding a patient's tendency to thrombosis by his reaction to a test dose of heparin. They have termed this the "Heparin Tolerance Test." The procedure is simple. The coagulation time is determined by the capillary tube method. Following this, 10 mg. of heparin is injected intravenously and the coagulation time is determined at 10, 20 and 30 minute intervals after injection. Normally there is a prolongation of coagulation time of from three to five minutes at the end of the ten minute period following injection. In patients who have an increased tendency to intravascular clotting there is less prolongation of the coagulation time. In other words the flatter the curve after injection of 10 mg. of heparin the greater the tendency to thrombosis.

In some limited experience with this test we have been impressed with the wide variation in reaction of normal individuals to the test dose of heparin and have had difficulty in interpreting the results on patients with suspected thrombosis.

Roentgenogram of the chest: Positive roentgen ray evidence of pulmonary infarcts is of importance in diagnosis clinically silent phlebothrombosis. A wedge shaped area of consolidation with the base of the wedge at the periphery of the lung is described as typical. However, in our experience the typical picture is the exception rather than the rule. Homans[18] partly explains this in his statement that not all emboli produce infarction because of the unpredictable efficiency of the collateral pulmonary circulation.

Electrocardiography: The cardiac tracing may be helpful in diagnosing pulmonary embolism or infarction. Murnghan and coworkers[19] and others have described the changes in the electrocardiographic pattern found in pulmonary embolism. Coexisting heart disease may make the tracing valueless. In 180 patients who had pulmonary infarction or embolism, Carlotti and coworkers[13] found only 31 or 16.6 per cent showing the changes which fell into the pattern of the cor pulmonale complex. Cummins[20] has found that serial electrocardiographys have increased the value of this procedure in his experience. The electrocardiogram may lend valuable confirmatory aid at times or may be of no diagnostic value at other times.

While these procedures may be of aid, no single sign can be relied upon to make the diagnosis of venous thrombosis or pulmonary embolism. If the diagnosis remains doubtful we feel that treatment

should be carried out as if the diagnosis of venous thrombosis was certain.

TREATMENT

During the last eight to ten years the clinical attitude toward venous thrombosis has changed from one of passive inactivity to something more definitive. General prophylactic methods, the use of anticoagulants, venous interruption and anesthesia of the paravertebral lumbar sympathetic system have been used extensively. The enthusiasm of various clinics for one or another of these methods of therapy occasionally has resulted in some confusion as to their proper application and place in the management of deep vein thrombosis. While none of these methods is a panacea for venous thrombosis, each has its indications. The object of treatment is to prevent or diminish the occurrence of clot formation or clot embolization and to decrease the late sequelae of venous obstruction. To accomplish this all of the therapeutic aids at our disposal will at times have to be utilized.

General Prophylactic Methods: Suitable preoperative care, gentle surgical technic, elimination of infection and measures to prevent stasis in the leg veins, mainly elevation of the foot of the bed, exercises while in bed and early ambulation during convalescence, are commonly agreed upon as important by all investigators in decreasing the incidence of thrombosis. These measures at the Massachusetts General Hospital[21] reduced the incidence of thrombosis and fatal embolism in postoperative cases from 1 in 333 to 1 in 800.

Anticoagulant: Heparin is the first anticoagulant that was made available for clinical use. It was introduced by Charles and Scott[22] in 1933. D'Alessandro[23] stated in 1942, "It is the only inhibitor of blood clotting which has ever been isolated from the human body in a reasonably pure state." Heparin has been shown to have no adverse effects on the constituents of the blood or the physiologic processes of man. Heparin will prolong the clotting time and actually prevent thrombus formation when given intravenously in adequate amounts.

Bauer[4] has reported excellent results with this drug in deep vein thrombosis. No prophylactic treatment was used but as soon as thrombosis was suspected phlebography was performed and, if this was positive, 150 mg. of heparin was given intravenously and one or two more doses of the same size were given on the same day at intervals of four hours. Following this, three daily doses of from 100 to 150 mg. each were administered, without any study of the blood clotting mechanism. Forceful active leg movements were insisted upon from the first day. In his experience the temperature usually returned to normal by the fourth or fifth day and local signs in the leg disappeared. The patient then was made ambulatory and heparin was discontinued one day later. Table 2 shows his results.

Table 2. *Results of Heparin Treatment for Venous Thrombosis* (Modified from Bauer[4])

	Conservative Treatment	Heparin Treatment
Mortality among thrombosis cases	18 per cent	1.4 per cent
Average stay in bed	40 days	4.7 days
After effects	Serious	None or slight

Loewe and Rosenblatt[24] in 1944 introduced the heparin-Petkin menstruum as a means of giving heparin subcutaneously. Pitkin menstruum consists of gelatin, 15 to 30 per cent, dextrose, 5 to 12 per cent, glacial acetic acid, 0.5 per cent and enough water to make 100 per cent. This menstruum eliminates the need for repeated intravenous injections or the continuous intravenous infusion of heparin. The chief objection to it is the rather marked pain that it causes at the site of injection.

The anticoagulant, dicumarol, which is isolated from spoiled sweet clover, has been shown to be effective in preventing the occurrence of postoperative venous thrombosis.[25] In the prophylactic treatment of 1,000 patients, following various surgical procedures, Barker and coworkers[25] report only one death from pulmonary embolism. The site of action of these drugs on blood clotting is shown in figure 4.

The following is a suggested method of use of the two anticoagulation drugs:

Anticoagulation Therapy
(Heparin and Dicumarol Combination)

1. Determine heparin sensitivity (heparin tolerance test).
2. Heparin 50 mg. every four hours intravenously. Determine coagulation time one hour after heparin and just before the next injection.
3. Simultaneously start oral administration of dicumarol: 200 mg. the first day, 100 mg the 2nd day, and from 50 to 100 mg. on the third day.
4. Discontinue heparin on the second day as dicumarol becomes effective.
5. Prothrombin levels must be determined daily. The level must be kept between 30 and 60 per cent of the normal prothrombin time.[17]
6. Dicumarol is used until the patient is ambulatory.
7. Warning: Do not stop dicumarol suddenly.

It should be repeated that this is only a suggested method for the use of the anticoagulation drugs. Each patient's dosage will have to be varied as the clotting mechanism of the blood is altered. It generally is stated that the prothrombin time should

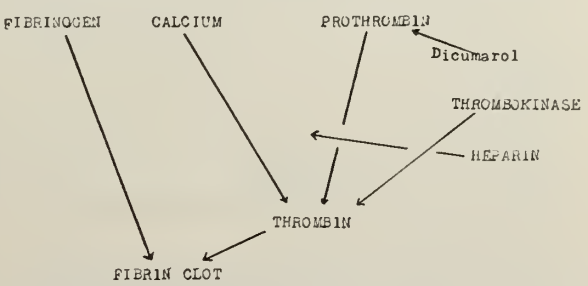


Fig. 4. Diagram of blood clotting showing the site of action of heparin and dicumarol. (Modified from Howell.)

be kept between 30 and 60 per cent of normal. However, there is no definite information as to just what prothrombin level will prevent intravenous clotting. When the level drops below 25 or 30 per cent of normal, spontaneous bleeding may occur. The ideal prothrombin level is not known and may vary from individual to individual. If it could be determined that a level of, say 60 per cent of normal would control intravenous clotting, a wide margin of safety would be present. The problem could be answered by keeping large groups of patients at certain levels, e. g., 50 to 60 per cent of normal, 40 to 50 per cent of normal, and then analyzing each group for the best results. If it is found that a relatively high prothrombin time will control intravascular clotting, less attention would have to be paid to the prothrombin time and a dosage of dicumarol could be arrived at which requires little laboratory control and have a wide margin of safety.

Dicumarol is a specific liver toxin and this fact must be remembered in using this drug. Following surgery there is evidence that there is slight impairment of liver function.[26] Our experience in using dicumarol after major surgery would seem to further emphasize this dysfunction. We have observed that patients who have undergone operation show a satisfactory prolongation of their prothrombin time (60 per cent of normal or lower) on smaller doses of dicumarol than patients who have not been subjected to operation. Many patients following operations will have a prothrombin time of 60 per cent of normal on as little as a 100 mg. initial dose and then 50 mg. daily or every other day.

It has been shown that dicumarol should not be used in the presence of renal or hepatic insufficiency, subacute bacterial endocarditis, puerpura, blood dyscrasias with bleeding tendency or following recent operations on the central nervous system.[25] If bleeding occurs it can be controlled by transfusion of fresh citrated whole blood or by the injection of menadione bisulfite (synthetic vitamin K) 65 mg. Microscropic hematuria is frequently one of the first indications of early bleeding and we feel that daily microscopic urine examination should be carried out on patients receiving dicumarol as well as a daily prothrombin level.

Criticism of Anticoagulation Drugs:

Unfavorable:

a. Thrombosis or embolism may occur upon discontinuing the anticoagulant. This is becoming less frequent with the increasing knowledge in the use of these drugs.

b. Both heparin and dicumarol are difficult to control and daily laboratory studies have been essential in our experience.

c. There is some danger of hemorrhage in postoperative patients.

d. Dicumarol cannot be used under certain conditions (as given) and if given in too large amounts it may be toxic.

e. Heparin, which is probably the best anticoagulant, is quite expensive at the present time. This fact makes the physician reluctant to use it prophylactically.

Favorable:

a. The use of anticoagulation drugs is an attempt to control the basically altered physiology that occurs following operation, trauma and other illnesses. It has been found that normally the prothrombin time is prolonged following surgery and that there is an elevation of platelets in the blood stream for several days.[17]

b. Heparin is especially useful as it is an approach to the normal inhibitor of blood clotting and has no adverse effects if properly controlled.

Summary of Anticoagulant Therapy: The use of anticoagulant drugs to prevent venous thrombosis is basically sound as it is an attempt to control the altered blood clotting which is known to precede the thrombosis. The methods of utilization and control have been well established and favorable results are reported from several clinics.[4, 17, 24, 25, 27]

Because of the necessity for careful laboratory control, the administration of these drugs is difficult. This, and the expense of the drugs, somewhat limits their use prophylactically. The method certainly should be used in pelvic vein thrombosis and in the presence of thrombosis or embolic phenomena occurring after vein ligation.

In choosing an anticoagulant the heparin-Pitkin menstruum as utilized by Loewe and Rosenblatt[24] should be kept in mind as there are less toxic reactions and contraindications to the use of heparin than to dicumarol.

Venous Ligation: In view of the well established fact that from 85 to 90 per cent of pulmonary emboli arise in the deep veins of the legs the interruption of these veins becomes a logical procedure from the standpoint of embolus prophylaxis. Homans[28] in 1934 first called attention to interruption of the femoral veins to prevent pulmonary infarcts. Since that time the procedure, or one of its modifications, has been utilized by a number of surgeons.

A brief consideration of the usual anatomic arrangement of the veins of the lower extremities makes it apparent that the interruption of the superficial femoral vein will block most of the emboli forming in the veins below the knee or lower part of the thigh (figs. 1 and 2). Because of variations in the deep veins of the thigh not shown in these figures, but recently emphasized by Edwards and Robuck,[29] there is still a possibility of emboli reaching the lungs from the leg.

The indications for this procedure are: (1) as a prophylactic procedure following operation and traumatic injuries (obviously such procedures must be carried out bilaterally); (2) in the presence of phlebothrombosis or thrombosis limited to the leg and lower thigh, (3) following nonfatal emboli even in the absence of localizing signs. In our experience there have been essentially no sequelae to this procedure. If it is done as a phophylactic

"...pressure of the gravid uterus mechanically interferes..."

in pregnancy

"Constipation is the rule. The pressure of the gravid uterus mechanically interferes with the function of the small intestine and colon per se and also renders the act of defecation less efficient by its effect on the diaphragm, abdominal muscles and levator ani."

—*Bockus, H. L.: Gastro-Enterology, Philadelphia, W. B. Saunders Company, 1946, vol. 3, p. 999.*

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procedure only minimal edema has been noted occasionally in the lower extremities. We have seen some edema if it is done after phlebothrombosis is well established.

Allen's[6] extensive experience with this procedure is worth repeating. He reviewed 1,518 patients who had superficial femoral vein interruption. In 458 of the patients ligated prophylactically, and therefore bilaterally, there was only one fatal embolism. Five patients had mild phlebitis. In a comparable group of 458 patients who did not have prophylactic femoral vein interruption there were 55 cases of thromboembolic syndrome with 26 fatal pulmonary embolisms. In none of his cases has a patient lost "life or limb" as a result of this procedure. Twenty-five lives were saved as a result of the prophylactic ligations.

Meigs and Ingersoll[7] consider that prophylactic ligation may be advisable in all gynecologic patients more than 60 years of age because the incidence of thromboembolic disease is relatively high in this group. Allen, like Meigs, feels that patients who are 60 or 65 years of age or older who have to undergo a major surgical procedure should have a prophylactic vein ligation. These authors stress its need in operations for pelvic disease, prostatic disease, abdominal cancer and fractures of the femur in elderly individuals.

For some time it has been our practice to do prophylactic bilateral superficial femoral vein ligations on all patients undergoing major surgery in the elderly age group. Younger individuals who are markedly debilitated, anemic, hypoproteinemic or who gave a history of previous phlebitis, also have been subjected to this procedure.

Technic of Superficial Femoral Vein Ligation: Technically, prophylactic ligation of the superficial femoral vein is not difficult. The patient's knees are slightly flexed and the leg and thigh rotated laterally. The femoral artery is identified by its pulsation just below the inguinal ligament and the incision, approximately 7 cm. in length, is made just medial to this pulsation and parallel to it. The upper end of this incision is from 4 to 5 cms. below the pubic tubercle. The later is a better landmark than the inguinal ligament as the ligament varies with the position of the patient, obesity and degree of relaxation. This incision is deepened until the femoral artery and vein can be identified in their sheath by the pulsation of the artery. All dissection is made parallel to the femoral vessels and lymphatics. The femoral sheath is incised and the femoral vein just medial to and behind the femoral artery is identified. Two or three centimeters of the superficial femoral vein are freed of surrounding tissue and the deep femoral vein is identified. A ligature of number 8 cotton is then passed around the superficial femoral vein at its junction with the profundus and the vessel is ligated in continuity. Hemostasis is obtained and the wound is closed with cotton stitches.

If the procedure is carried out as a therapeutic measure the incision must be longer. Both the superficial femoral vein and the common femoral vein then are mobilized and the former opened. The superficial femoral vein is ligated if there is free flow of blood. If a clot is present it can be sucked out or, if this fails, higher ligation is necessary or anticoagulation therapy is instituted. Allen,[6] in describing the technic used at the Massachusetts General Hospital, states that it takes between forty minutes and an hour for bilateral vein ligation as performed by them. That is not too long a period when the procedure is therapeutic in nature and clots are removed. But for prophylactic ligation, it is too long at the end of a previous major operation. By using the outlined technic, we usually do both sides in from ten to twenty minutes.

We have carried out this procedure in more than 150 patients with one death from pulmonary embolism. This case shows that prophylactic superficial femoral vein ligation does not completely protect against embolism and the case is reviewed.

REPORT OF CASE

Mrs. A. C., a 55 year old housewife, was admitted to the hospital for the third time on May 26, 1947. She complained of pain in the lower abdomen of two or three weeks' duration. The past history was relevant inasmuch as her first hospital admission in September 1934 had been for a pelvic mass and at operation this tumor was removed and proved to be a "small cell carcinoma" of the ovary. Her second admission was in June 1946 for a minor rectal operation. The pelvice examination showed nothing unusual.

Physical examination on the third admission in May 1947 showed a 3 cm. hard nodular mass in the right cul-de-sac adjacent to the cervix. Because of pain and the previous history of carcinoma, exploration was advised. On May 27, 1947, at operation a small uterus and a small hard retro-uterine mass were removed from the cul-de-sac. Bilateral prophylactic superficial femoral vein ligation was carried out at the close of the procedure. Pathologic study failed to show any residual carcinma and the only findings of note were a partially calcified ovary and questionable talc granuloma. The patient's immediate postoperative course was uneventful and she was discharged from the hospital on June 6, 1947, her tenth postoperative day.

The patient was readmitted for the fourth time on June 7, 1947, because of vomiting and diarrhea which she developed after going home. She was treated conservatively and recovered rapidly, being up and around after her third hospital day. On the seventh hospital day while visiting with her husband she suddenly slumped in her chair, complained of shortness of breath and pain in her chest and died fifteen minutes later.

Postmortem examination showed a large embolus filling the pulmonary artery. Careful examination of the pelvic veins revealed the stump of a well organized, partially adherent antemortem clot in the left internal iliac vein, the site of origin of the pulmonary embolus.

This case illustrates that while prophylactic superficial femoral vein ligation has been a major step forward in solving the thromboembolic syndrome, it does not prevent the occurrence of fatal



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embolism in all patients. It further emphasized the two shortcomings incidental to this form of treatment: (1) That a small percentage (10 per cent) of emboli arise in veins outside of the legs; and (2) that vein ligation does not alter the underlying pathologic clotting process that occurs after trauma, operation or debilitating disease.

Interruption of Veins other than the Superficial Femoral: The indications for ligation higher than the superficial femoral veins are not so clear cut. Prophylactic ligation of the common femoral or external iliac veins is not advisable because of the high incidence of edema that follows their interruption. Therapeutic ligation of the common femoral vein is indicated at times when the thrombus has progressed above the deep femoral vein or if it is thrombosed. In general, if the common femoral or external iliac vein contains a thrombus it is better to ligate the common iliac vein as there are a greater number of anastomotic channels left by the higher ligation and less edema results.[1]

Technically, ligation of the common iliac vein is difficult, especially on the left side where the vein lies behind the artery and tearing may easily occur with profuse hemorrhage. This procedure interrupts the vein above the usual source of embolism and for this reason at times is the procedure of choice. The residual swelling is not marked. Homans[1] states ". . . one can hardly believe that an operation, seemingly so radical, leaves so little venous congestion behind." The indications for this procedure are becoming less frequent with the development of more efficient anticoagulation therapy. The decision to ligate the common iliac vein requires considerable experience and judgment as well as technical skill. We do not suggest its use prophylactically.

Ligation of the inferior vena cava has been reported by several workers.[6, 30, 31] All of these authors have ligated this major vessel therapeutically and many times it apparently has been life saving. The indications for inferior vena cava ligation are not common. We feel that the procedure should be limited to those cases which have pelvic vein phlebitis with superimposed septicemia.

Little has been written about prophylactic ligation of this vessel which obviously would offer the greatest protection if it produced no untoward consequences. In low or midabdominal procedures it is also readily accessible through the posterior peritoneum and therefore requires no additional incision. We have ligated the inferior vena cava on three patients prophylactically. Each of these ligations immediately followed major surgical procedures before the abdominal wall closure was accomplished. The first of these patients was operated on for carcinoma of the bladder. A ureterocolic anastomosis and cystectomy was performed in two stages. The patient had previously had both legs amputated for Buerger's disease just below the knees. The inferior vena cava was ligated just above its origin. The postoperative course was uneventful. The other two cases had prophylactic ligations following resections for carcinoma of the rectum and the splenic flexure respectively. Both of these patients suffered severe and prolonged postoperative shock. Each required seven operative and postoperative blood transfusions before this complication could be controlled. We feel that the necessary trauma incident to a major resection plus the massive pooling of blood that occurred in the lower extremities and pelvis accounted for the ensuing shock. It is of interest that the first patient, who had previously had both legs amputated, suffered no shock upon ligation of the vena cava. This probably is related to the fact that the potential blood pool was considerably less than normal in size. Others reporting on inferior vena cava ligation done some time following operation have only rarely mentioned shock as a complication. However, Homans[16] in reviewing this subject states, ". . . in some cases so enormous an amount of blood is trapped in the lower half of the body by sudden interruption of the vena cava that patients are occasionally thrown into serious or even fatal shock unless elevation of the legs is immediately and persistently employed." In our experience not only elevation of the foot of the bed but multiple transfusions were necessary to combat the ensuing shock.

Moderate swelling of the lower extremities develops after inferior vena cava ligation. Linton, reported by Allen,[6] has performed this operation on thirteen patients, all of whom survived, but three developed leg ulcers.

From our experience with inferior vena cava ligation we feel that it should not be used as a prophylactic procedure following major abdominal surgery. There is little question but that the procedure is of value in the presence of pyemia with its origin in the pelvic veins.

Criticism of Vein Interruption:

Unfavorable:

1. Venous interruption does not eliminate the fundamental underlying altered clotting mechanism which causes the thrombotic process.

2. Approximately 10 per cent of venous thromboses does not arise in the legs and this may give rise to pulmonary embolism.

3. High ligation, above the superficial femoral vein, will result in a high incidence of edema and in some cases postphlebitic ulceration.

Favorable:

1. In view of the fact that 90 per cent of emboli arise in the deep veins of the leg, bilateral superficial femoral vein ligation seems indicated following major operations and injuries, especially in elderly patients.

2. In the presence of phlebothrombosis bilateral superficial femoral vein ligation is indicated. The vein should be opened before ligation to be sure that the thrombus has not extended above the point of interruption.

3. The operative procedure is performed easily,

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prophylactically at the end of the operation or therapeutically under local procaine anesthesia. This procedure eliminates special laboratory tests which are necessary if anticoagulants are used.

4. The incidence of thromboembolic syndrome has been greatly reduced by interruption of the superficial femoral vein.[6, 7, 8]

5. In the presence of pelvic vein phlebitis and superimposed septicemia, inferior vena cava ligation and the use of modern antibiotic agents may be life saving.

Summary of Vein Ligation Therapy: Venous interruption probably has its greatest usefulness in ligation of the superficial femoral veins as a prophylactic measure. Theoretically, this procedure should eliminate embolic phenomena in all but one out of ten cases of venous thrombosis. Higher ligation in selected cases as a therapeutic procedure may be life saving. The greatest shortcoming of vein ligation is that it does not eliminate the altered clotting mechanism and will not always prevent pulmonary embolism as shown in the case report. We feel that it is a practical prophylactic method of preventing embolism for the surgeon who does not have the facilities of a large laboratory and who is dealing with elderly patients who are debilitated.

Paravertebral Lumbar Sympathetic Block: It has been shown that arteriospasm[31, 32, 33] and venospasm[34] both accompany venous thrombosis, and it is probably this spasm which accounts for much of the pain in this condition. A paravertebral block of the lumbar sympathetics with procaine will relieve much of the pain, reduce the edema and restore the arterial pulsations which are diminished. Ochsner[35] found the disappearance of pain to be permanent in approximately 90 per cent of his patients. The edema completely disappeared in four days in more than one half of the cases and in only 5 per cent did it last longer than twelve days. We have noted on several occasions the marked relief from this procedure in thrombophlebitis but have preferred other methods of treatment in the cases of phlebothrombosis.

While the pharmacologic effect of procaine should only last one or one and one half hours, the physiologic effect of the anesthetization of the sympathetics lasts a good deal longer, probably close to twenty-four hours.[35] It is frequently necessary to repeat the block on several successive days for lasting relief.

Criticism of Paravertebral Lumbar Sympathetic Block Therapy:

Unfavorable:

1. Lumbar sympathetic block will not protect the patient from embolism.

2. It will not entirely prevent residual edema.

Favorable:

1. It will release the vasospasm, promoting the flow of the stagnated blood. This will perhaps prevent spread of the thrombus because of the improved blood flow and decreased stasis.

2. Relieves pain and reduces edema.

CONCLUSIONS

Venous thrombosis arises in the deep veins below the knee in from 85 to 90 per cent of all cases.

Of the two clinical types, phlebothrombosis and thrombophlebitis, the former is the more dangerous and causes pulmonary embolism much more frequently.

Venous thrombosis may not be recognized until pulmonary embolism occurs. There are no laboratory tests which can be relied upon to make the diagnosis of venous thrombosis.

The treatment of venous thrombosis has changed from one of passive inactivity to one of definitive treatment during the last decade.

A critical appraisal of the use of anticoagulant therapy, venous interruption and paravertebral lumbar sympathetic block in the treatment of venous thrombosis is presented.

Each of these methods of therapy has its indications and at present we feel that there is no one treatment either prophylactic or therapeutic which is applicable to all cases. Each case must be individualized and treated according to its own merit.

In patients in whom phlebothrombosis is suspected we believe that treatment should be carried out as if the diagnosis was a certainty. At present it would seem that the most practical prophylactic method of treatment is bilateral superficial femoral vein ligation. As knowledge of the use of anticoagulants increases, these drugs may become the method of choice, both prophylactically and therapeutically, in controlling venous thrombosis.

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BOOK REVIEWS

Clinical Neurology, A Textbook, With an Introduction to the History of Neurology. By Israel S. Wechsler, M.D., Clinical Professor of Neurology, Columbia University, New York; Neurologist, The Mount Sinai Hospital; Consulting Neurologist, Montefiore Hospital and Rockland State Hospital, New York. Sixth Edition, Illustrated. Philadelphia and London. W. B. Saunders Company. 1947. Price $8.50.

This book is so well known that it scarcely needs a review. It is adequate to its purpose in every respect in so far as it is possible for a textbook to be. It is up-to-date, accurate and well presented. It compares favorably with other texts. The section on the neuroses is too brief to be of much value except as an adjunct to the organic part of the book. A section on the history of neurology is a pleasing addition not ordinarily found in textbooks. L. B. A.

A Textbook on Pathology of Labor, the Puerperium and the Newborn. By Charles O. McCormick, Clinical Professor of Obstetrics, Indiana University School of Medicine; Consulting Obstetrician to William H. Coleman Hospital for Women, Indianapolis City Hospital, and Sunny Side Sanitarium. With 272 Illustrations including 24 in color. Second Edition. St. Louis: C. V. Mosby Company. 1947. Price $8.50.

This volume is an outgrowth of a series of the author's lectures prepared for the senior medical students at Indiana University. The book is now in its second edition. The streamlining plan and the directness of presentation together with detailed therapy appear to have had acceptable desirability.

As the title suggests, this book presents the deviation from the normal which one encounters in the practice of obstetrics. Extra consideration is given to pelvimetry, breech extraction, placenta previa, postpartum hemorrhage, use of forceps, version and cesarean section technics, puerperal infection, breast pathology and asphyxia neonatorum. Tubal sterilization and detailed description of therapeutic procedures should elicit interest.

The subject matter is presented in a form that simulates a good notebook from a course completed. It is my opinion that the author has eliminated some two or three hundred pages from his text by adopting this manner of presentation, most of which would have been verbage and added little to the text. Instead of having the customary large comprehensive list of references at the end of each chapter, a limited number of selected references are pertinently inserted throughout the text. The author is human in his presentation.

He has a good summary on obstetric analgesia, conditions of congenital origin and conditions of the newborn related to delivery. His section on obstetric operations includes a description of virtually all procedures done with hand and instrument in obstetrics. His section on obstetric injuries certainly brushes one up on the many emergencies that may confront one in the conduct of an obstetric practice.

The author presents his subject matter as original or as patterned after good men, taking care to name his preceptors. It is the opinion of this reviewer that both the specialist and the man who only does some obstetrics can profitably own this book. T. A. C.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1946. With comments that have appeared in the Journal. American Medical Association, 535 North Dearborn Street, Chicago 10, Ill. 1947. Price $1.00.

This volume was formerly of most interest to those who wished to know why the Council on Pharmacy and Chemistry had not accepted certain of the preparations it had considered. The reports were mainly those of rejection; though, through the years, the educational nature of the Council's work was attested by status reports on drugs, or therapeutics procedures, or preliminary reports on agents showing promise of usefulness but not yet ready for adoption by the general and medical profession. In recent years, the tendency has been toward a preponderance of the educational type of report. In the present volume, both the condemnatory and the educational phases of the Council's work are represented.

Pharmaceutical and scientific investigators, alike, will be interested in the informative report on the Council's new Therapeutic Trials Committee. Of special interest to manufacturers is a statement on the revised rules of the Council, though this exposition of the trends of Council policy is of concern to all who are interested in progressive rational therapeutics.

Attention is called to the several reports on the adoption of generic designations for drugs proposed or marketed under protected names. Not all such actions of the Council have been the subject of separate published reports; the recognized terms have appeared in the published descriptions of the drugs when accepted, and will be inserted in another Council publication, "New and Nonofficial Remedies, 55 as adoption of such designations for already accepted protected names proceeds.

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APRIL, 1948

EDITORIALS

ANNUAL SESSION

The 90th Annual Session of the Association is in progress as this issue of THE JOURNAL goes to press. While the session will have concluded before THE JOURNAL reaches members, it will not be possible to give any information of the session until the May issue. Minutes of the session will appear in the July issue as is customary but general information of the meeting and committee appointments will be in the May issue.

NEW TEST FOR EARLY PREGNANCY

The male frog, in a series of tests run by Wiltberger and Miller (Science **107**:198, February 1948), has been found to have a high diagnostic value as a test animal for early pregnancy.

The test as reported has the advantage of speed and accuracy in the first trimester as well as economy and simplicity.

The technic as described by the authors is as follows: "The first morning (overnight) specimen of urine is obtained and 5 cc. carefully injected subcutaneously into the dorsal or lateral lymph sac of the frog. Two or more frogs are used, as there may be a difference in sensitivity to the test. Each frog is placed in a separate, clean, dry glass jar with a perforated lid and set aside for from two to four hours at room temperature. At the end of this time any urine that has been voided by the frog is examined microscopically. If spermatozoa are not present, the urine is carefully drained from the jar without disturbing the frog. The frog is then seized in the hand while still in the jar. The pressure usually induces another urination. The new specimen of urine is then examined for spermatozoa. The frog's sperm are easily identifiable. When spermatozoa are present, the test is positive; when they are not present, the test is negative. The fact that there are no intergrades eliminates all subjective interpretations. The test animals are not killed and may be used for another test in four or five days."

BRITISH PHYSICIANS REJECT NATIONALIZED MEDICINE

The National Health Service Act in Great Britain is scheduled to become effective on July 5. The *Journal of the American Medical Association* on February 28 carried the following editorial concerning the situation:

"In a plebiscite conducted by the British Medical Association 86 per cent of British physicians voted against working for the universal free medical service scheme that has been scheduled to take effect on July 5. Of course the scheme is not really free, since every tax payer in England contributes toward its support. If the physicians stand firm in their refusal to work, the British government would have only 3,560 general practitioners and 971 consultants to provide the National Health Service for about 47,000,000 people. In the plebiscite 89.5 per cent of British physicians disapproved the National Health Service Act in its present form. This vote was 40,814 to 4,735. As has already been said, 86 per cent voted against accepting the service, the vote being 24,340 to 4,084. Of these, 84 per cent said that they would conform with the major decision and would not accept service. This vote was 24,066 to 4,495. The ballots were sent to more than 56,000 doctors, and 82 per cent were returned. The British physicians are not striking against the sick; they will care for their patients but will not accept payment from the government.

"Now the British Medical Association proposes to present the results of the ballot to its representative body, which will meet at the headquarters of the British Medical Association on March 17. In Great Britain a small group of physicians opposed the combat with the government and one organized group—the Socialist Medical Association—has been giving aid and comfort to the Minister of Health and his satellites by asserting that most general practitioners will eventually be anxious to join the service on account of the generous financial terms that the government has offered.

"The British Medical Association opposes the National Health Service Act as the first and irrevocable step toward a whole time state medical service. In Great Britain, as in this country, the national medical care plan is offered as a health service instead of what it actually is—a system which would eventually bring every physician into government employment. The *British Medical Journal* has inspired British physicians to stand firm in their opposition to such enslavement. In an editorial published January 17 the *British Medical Journal* says:

" 'Doctors are not business men. They do not form a class whose money comes to them by heredity. They work hard—probably harder and certainly for longer hours than any other section of the community. They are subject to great strain and risk of ill health. The love of their work makes them put up with much that no other group of workers would tolerate. Next to their work what

they most prize is freedom—freedom to practice what they are taught and to carve out a career by hard endeavor. In Britain this freedom is secured by the ownership of general practices and by voluntary service in hospitals. This freedom is now being undermined. What medical men most fear is this loss of freedom. By standing firm they can retain it.' "

NEWS NOTES

Raymond F. Gard, M.D., Kansas City, was the guest speaker at the Business and Professional Women's Club in Independence on February 9. He spoke on "Tumors."

O. B. Barger, M.D., Harrisonville, has been appointed coroner of Cass County.

Hubert M. Parker, M.D., Kansas City, spoke before the Wapello County (Iowa) Medical Society at Ottuma, Iowa, on February 5 on "Water Balance."

David V. LeMone, M.D., Columbia, has been elected chief of staff of the Boone County Hospital as successor to the late Dudley A. Robnett, M.D. A. R. McComas, M.D., Sturgeon, vice chief of staff, requested the election rather than assume the title himself.

C. Malone Stroud, M.D., St. Louis, was elected president of the St. Louis Society for Crippled Children on February 13 to succeed J. Archer O'Reilly, M.D., who died on December 5.

Robert M. Myers, M.D., Kansas City, spoke at a "Career Day Assembly" at the Southeast High School, Kansas City, on February 18. Representatives of various professions are asked to speak to students in this preenrollment project.

James W. Allee, M.D., Columbia, has been appointed college physician and surgeon at Christian College, Columbia.

Garrett Pipkin, M.D., Kansas City, received a certificate of merit at the meeting of the American Academy of Orthopedic Surgery, held January 21 to 27 in Chicago. His exhibit was on "Lesions of the Suprapatellar Plica of the Knee Joint."

A. N. Arneson, M.D., St. Louis, was elected president of the St. Louis Gynecological Society at a meeting on February 12. Other officers elected were Matthew Weis, M.D., vice president; Paul F. Fletcher, M.D., secretary; Carl Wegener, M.D., treasurer; E. Lee Dorsett, M.D., editor.

The St. Louis Gynecological Society and the gynecologic societies of Chicago and Kansas City will hold a joint meeting in St. Louis on April 24. The morning session will be held at the Desloge Hospital and the afternoon session at the St. Louis Maternity Hospital. A dinner meeting will be held at the University Club at which time the visiting societies will furnish the program. All members are invited to attend the meeting.

DEATHS

Weir, Edward Francis, M.D., Meadville, a graduate of the University Medical College of Kansas City, 1899; Fellow of the American Medical Association; member of the Linn County Medical Society; aged 71; died January 30.

Zillman, August W., M.D., Keytesville, a graduate of Rush Medical College, 1886; honor member of the Chariton - Macon - Monroe - Randolph County Medical Society; retired; aged 89; died February 11.

Owens, Patrick Henry, M.D., Kansas City, a graduate of the University of Kansas School of Medicine, 1912; Fellow of the American Medical Association; member of the Jackson County Medical Society; aged 64; died February 11.

Stern, Franz O., M.D., St. Louis, a graduate of Julius-Maximillians-Universitat Medizinische Fakultat, Wurzburg, Bavaria, 1932; member of the St. Louis Medical Society; aged 41; died February 25.

Dalton, Martin, M.D., Fenton, a graduate of Marion-Sims College of Medicine, 1896; member of the St. Louis County Medical Society; aged 79; died February 28.

MUSINGS OF THE FIELD SECRETARY

Overheard in the waiting room of an outstate clinic, four women discussing their aches and pains, said one, "I do not believe some of our doctors care much whether they see us or not."

At a local Chamber of Commerce meeting one half hour was consumed in debate over raising annual dues from $5.00 to $7.50.

The question has been asked, "How is one going to tell when a community really needs, and will support, another physician?"

Two physicians were discussing the need for more doctors in the United States. One maintained that there are plenty of practicing M.D.'s to take care of the medical needs of the people if they were properly distributed. The other held that there just are not enough practicing M.D.'s regardless of their distribution to deliver adequate medical service. Who is right? A ratio of 500, 1,000 or 1,500 people per physician or any other such ratio needs a lot of additional factors figured with it in attempting to determine the number of physicians needed to furnish adequate medical services to the people of this country. Furthermore, the picture changes, almost from day to day, because of new developments in medical research, because of effective health education and because of economic and sociologic developments.

A letter recently received tells of a town of 200 people and surrounding farming community, with

PRESIDENT'S PAGE

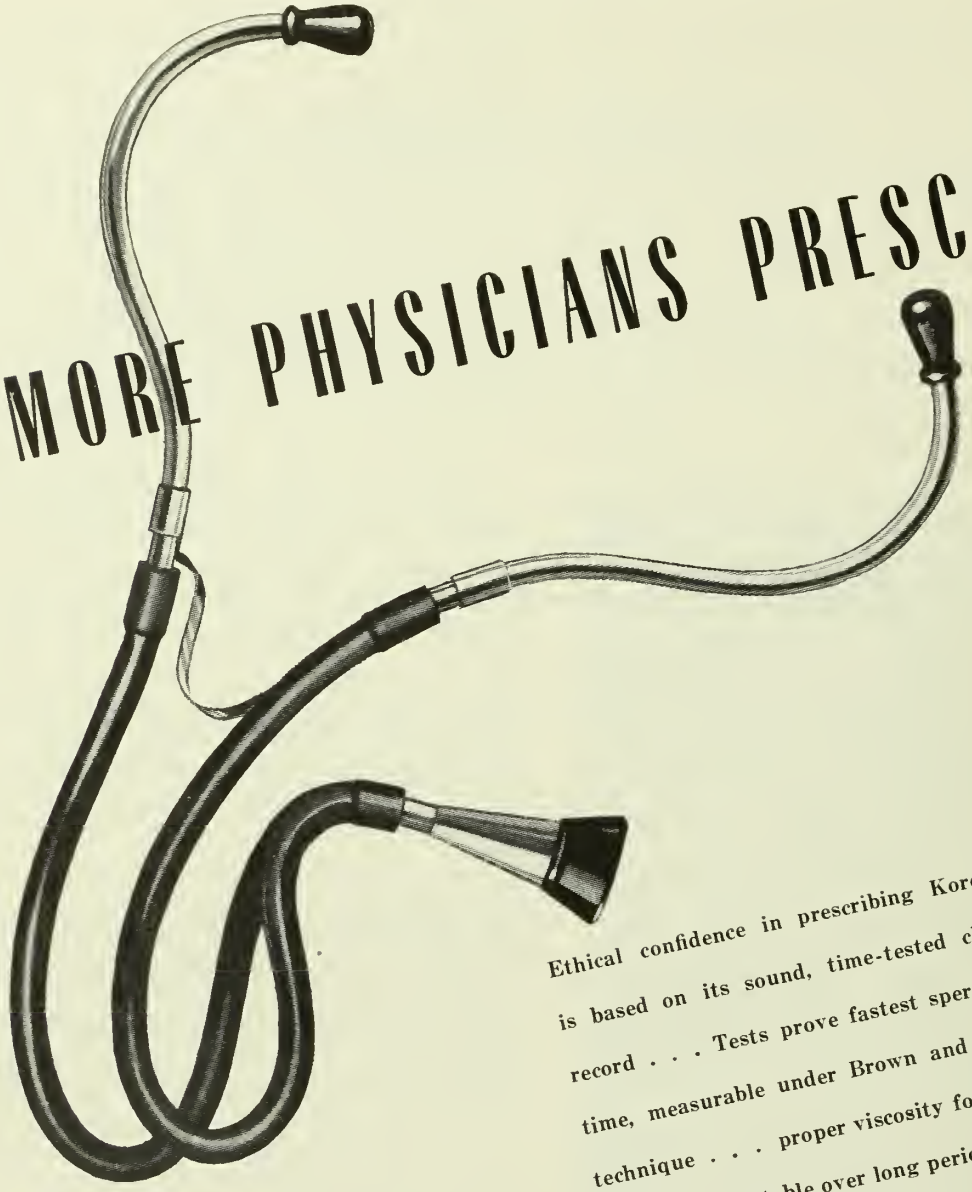
THE BLUE CROSS plan for hospitalization which started in St. Louis in 1936 and in Kansas City in 1938 now has a total enrollment of more than 1,000,000 persons. Using the 1940 census of Missouri as a base, there were 3,750,000 persons in the state. Thus, the present enrollment of Blue Cross represents one of every 3.7 persons.



Here is a voluntary plan for health care which has succeeded far beyond the original ideas of its sponsors. It is continuing to grow month by month. Is it too much to hope that eventually every family in Missouri will have this coverage? Some people (principally government social planners) say it cannot be done. We who have seen these hospital care plans expand so rapidly from humble beginnings take a different view.

The medical profession of Missouri is proud of the part it has played in the development of these fine civic organizations. The medical societies in St. Louis and Kansas City assisted the plans in their early stages; members of those societies have served as trustees and advisors. We shall continue our interest in the Blue Cross movement and strongly urge our members to do everything possible to help increase the enrollment.

Robert Mueller M.D



MORE PHYSICIANS PRESCRIBE

Ethical confidence in prescribing Koromex is based on its sound, time-tested clinical record . . . Tests prove fastest spermicidal time, measurable under Brown and Gamble technique . . . proper viscosity for cervical occlusion . . . stable over long period of time, p. H. consistent with that of the normal vagina.

KOROMEX

"First with the Finest in Feminine Hygiene"

HOLLAND-RANTOS COMPANY, INC., 145 HUDSON STREET, NEW YORK 13, N.Y.

Merle L. Youngs PRESIDENT

no hospital facilities nearby, being in need of a good M.D. Requests of this nature are received regularly but are passed over by physicians looking for suitable locations. However, it is not easy to explain to some of the people why physicians do not locate in these communities when for years past from one to three M.D.'s practiced there. At present there appears to be a number of localities over the state in need of the services of physicians with some special training in ENT and EENT.

ORGANIZATION ACTIVITIES

FINANCIAL STATEMENT FOR 1947

R. A. LENNERTSON & COMPANY
INDEPENDENT PUBLIC ACCOUNTANTS
SAINT LOUIS, MISSOURI

March 1, 1948

Missouri State Medical Association,
634 North Grand Boulevard,
St. Louis, Missouri.

Gentlemen:

An examination has been made of the accounts of the Missouri State Medical Association for the year 1947 and presented herewith is a report thereon together with the following attached exhibits:

Exhibit A. Balance Sheet.
Exhibit B. Statement of Income and Expenses.
Exhibit C. Statement of Committee and Meeting Expenses.
Exhibit D. Dues Receivable and Membership by Counties.

Scope of Examination

The Balance Sheet at December 31, 1947, and the Statement of Income and Expenses for the year 1947 have been reviewed. Examinations or tests were made of accounting records of the Association in the manner and to the extent deemed appropriate under the circumstances, without making a detailed audit of the transactions.

Cash in banks as shown by the books was reconciled with the regular monthly bank statements and confirmation letters received direct from the depositaries. The petty cash fund of $25.00 and United States Savings Bonds Series G with a par value of $55,000.00 were verified by physical inspection. Recorded cash receipts for dues, rentals, JOURNAL income and interest on bonds, were traced in total into the bank account as deposits. Disbursements for the year were substantiated by an inspection of paid cheques, purchase invoices and other data on file. Selective tests were made of the income and expense accounts for the period. It was noted that space was contributed by THE JOURNAL for publication of advertisements by the United States Treasury in connection with Savings Bonds.

Statement of Income and Expenses

After meeting all ascertained expenses, the financial result of the Association's activities for the year 1947 was an excess of income in the amount of $11,924.63 as set forth in Exhibit B. Members' Dues are taken into income on a cash basis as collected whereas all other accounts are maintained on the accrual basis.

Balance Sheet

Exhibit A presents the asset and liability accounts of the Association at December 31, 1947, and comments follow on the more important Balance Sheet accounts not previously discussed.

Accounts Receivable from JOURNAL advertisers were reviewed and are summarized below as to date of charge:

Month of Charge	Amount
December 1947	$1,280.41
October 1947	55.20
September 1947	13.20
August 1947	18.00
November and December 1946	21.00
Total	$1,387.81

Unpaid Members' Dues in the sum of $480.00, offset by a reserve account in a like amount, represent 1947 dues which were received in January 1948. Other delinquent dues were charged off at December 31, 1947, and the individuals dropped from membership in accordance with the by-laws. A summary of Dues Receivable and Membership by Counties, as shown by the Association's records, is presented in Exhibit D.

Furniture and Fixtures continue to be stated in the fixed amount of $1,000.00, purchases during the year being charged to expense in lieu of depreciation.

The records and data on file were carefully reviewed for liabilities at December 31, 1947, and it is believed that all current liabilities are included in the Balance Sheet. There is a contingent liability in the sum of $1,200.00 on four malpractice suits reported pending against members. The Association is required to furnish assistance in an amount not to exceed $300.00 in each case under the provisions of its by-laws.

Advance payments in the sum of $2,425.05 had been made by advertisers and exhibitors at the close of the year and these payments will be taken into income when earned in 1948.

General

The following insurance was in force at the close of the year:

Insurance On	Type of Coverage	Amount
Furniture and Fixtures	Fire	$ 2,000.00
Treasurer	Fidelity Bond	20,000.00
Automobile—Executive Secretary	Bodily Injury	15/30,000.00
	Property Damage	5,000.00
Automobile—Field Secretary	Bodily Injury	15/30,000.00
	Property Damage	5,000.00
Automobiles of Executive and Field Secretaries	Non-Ownership Bodily Injury	25/50,000.00
	Property Damage	5,000.00
Employee	Life-Endowment Policy with Disability Benefits (Cash Value $2,615.94)	12,000.00

The Executive Secretary was not covered by a fidelity bond at December 31, 1947, however, such coverage in the amount of $1,000.00 was put into effect on February 26, 1948.

During the year 1947, the Commissioner of Internal Revenue reclassified the Association from a scientific organization to a business league under Section 101 (7) of the Internal Revenue Code. As a result of the reclassification, employees of the Association were brought under the provisions of the Federal Insurance Contributions Act and Tax liability became effective October 1, 1947.

The records of the Association have been well maintained during the year 1947 in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding period.

Yours very truly,
R. A. LENNERTSON,
Certified Public Accountant.

EXHIBIT A

Missouri State Medical Association

Balance Sheet, December 31, 1947

ASSETS

Cash		$17,899.04
Mercantile-Commerce Bank and Trust Company (Treasurer's Account)	$17,663.34	
Mercantile-Commerce National Bank (Secretary's Account)	210.70	
Petty Cash Fund	25.00	
U. S. Savings Bonds Series G—Cost and Par Value		55,000.00
Accounts Receivable—Advertisers		1,387.81
Dues Receivable—Exhibit D (Paid January 1948)		480.00
Furniture and Fixtures		1,000.00
Advance for Traveling Expenses		231.31
		$75,998.16

LIABILITIES

Accounts Payable		
Supplies and Expenses	$ 780.13	
Accrued Salary—Treasurer	1.00	
Federal Withholding and Social Security Taxes	785.15	$ 1,566.28
Deferred Credit to Income		
Advance Payments by Advertisers	$ 43.80	
Advance Payments by Exhibitors	2,381.25	2,425.05
Contingent Liability to Members on four malpractice suits—$1,200.00		
Reserve for Uncollected Dues		480.00
Reserve for Future Activities		
Balance January 1, 1947	$59,602.20	
Add: Excess of Income over Expenses for the year 1947 per Exhibit B	11,924.63	71,526.83
		$75,998.16

EXHIBIT B

Missouri State Medical Association

Statement of Income and Expenses for the Year 1947

Particulars	General Activities	JOURNAL Publication	Together
INCOME:			
Dues received (Includes $1.00 per member annually for THE JOURNAL)	$39,113.00	$ 3,065.00	$42,178.00
Rentals—Annual Session Exhibit Space	7,630.00		7,630.00

Rent from Sub-tenant (office space)	540.00		540.00
Subscriptions to The Journal —Nonmembers		64.45	64.45
Advertising space—The Journal		24,316.93	24,316.93
Interest on U. S. Savings Bonds	1,250.00		1,250.00
Total Income	$48,533.00	$27,446.38	$75,979.38
EXPENSES:			
Salary—Executive Secretary	$ 4,000.00	$ 2,000.00	$ 6,000.00
Salary—Treasurer	1.00		1.00
Office Salaries	10,226.03	5,113.02	15,339.05
Employee's Retirement Insurance Premium	905.40		905.40
Office Rent and Light	2,260.35		2,260.35
Postage	374.99	392.08	767.07
Stationery, Printing and Office Supplies	1,860.67		1,860.67
Directories and Clipping Service	344.78		344.78
The Journal—Paper, Printing, Mailing, Etc.		13,639.56	13,639.56
Cash Discounts to Advertisers		38.65	38.65
Commissions on Journal Advertising		1,446.39	1,446.39
Telephone and Telegraph	1,110.69		1,110.69
Insurance—General	184.32		184.32
Fees, Taxes and General Expenses	796.38		796.38
Awards to Members	510.28		510.28
Traveling Expense—Executive Secretary	767.24		767.24
Traveling Expense—Field Secretary	1,299.97		1,299.97
Traveling Expense — General	635.51		635.51
Committee and Meeting Expenses (Exhibit C)	16,011.66		16,011.66
Equipment Purchases and Repairs in lieu of Depreciation	135.78		135.78
Total Expenses	$41,425.05	$22,629.70	$64,054.75
Net Income for the Period	$ 7,107.95	$ 4,816.68	$11,924.63

Exhibit C

Missouri State Medical Association

Statement of Committee and Meeting Expenses for the Year 1947

Annual Session		$ 6,294.32
Council Meetings and Councilors' Expenses	$2,977.60	
Delegates to A. M. A.	693.53	
Woman's Auxiliary	325.93	3,997.06
Committees:		
Conservation of Eyesight	$ 164.69	
Industrial Health	129.74	
Medical Economics	142.92	
Mental Health	8.44	
Postgraduate Instruction	384.36	
Public Policy and Relations	4,362.14	
Scientific Work	38.80	
Veterans' Care	489.19	5,720.28
		$16,011.66

Exhibit D

Missouri State Medical Association

Dues Receivable and Membership by Counties December 31, 1947

Counties	Total	Junior	Active	Honor	1947 Dues Paid Jan. 1948	Prepaid Dues
Andrew	6		6			
Audrain	13		11	2		
Barton	12		10	2		
Bates	11		10	1		
Benton	1		1			
Boone	47		45	2		
Buchanan	103		83	20		
Butler	20		18	2		
Caldwell-Livingston	15		15			
Callaway	16		11	5		
Camden	3		3			$ 30
Cape Girardeau	39		32	7		255
Carroll	6		6			
Carter-Shannon	5		5			
Cass	15		13	2		
Chariton-Macon-Randolph-Monroe	41		31	10		
Clay	33		33			270
Clinton	6		6			
Cole	29		26	3		
Cooper	15	1	14			
Dallas-Hickory-Polk	12		10	2		150
DeKalb	2		2			
Dunklin	23		21	2		
Franklin	26		25	1		
Greene	112	1	100	11		
Grundy-Daviess	13		10	3		
Harrison	5		5			
Henry	16		14	2		
Holt	5		3	2		
Howard	5		5			
Jackson	634	30	498	106	$ 90	
Jasper	65	1	53	11		
Jefferson	13		13			
Johnson	13		13			
Laclede	10	1	8	1		120
Lafayette	21		19	2		68
Lewis-Clark-Scotland	6		6			
Lincoln	8		6	2		
Linn	13		11	2		
Marion-Ralls	26		24	2		
Mercer	9	2	5	2		101
Miller	4		4			60
Mississippi	8		7	1		
Moniteau	6		6			90
Montgomery	6		5	1		30
Morgan	3		3			
New Madrid	11		11			
Newton	13		12	1		15
Nodaway-Atchison-Gentry-Worth	23		23			
North Central (Adair, Schuyler, Knox, Sullivan, Putnam)	20		18	2		
Ozark Medical Society (Barry, Christian, Lawrence, Stone, Taney)	42	4	35	3		
Pemiscot	14		14			
Perry	6		6			90
Pettis	34		29	5		
Phelps-Crawford-Pulaski-Dent	31		29	2		
Pike	13		10	3		
Platte	5		5			
Ray	7		6	1		
St. Charles	18		18			165
St. Francois-Iron-Madison-Washington-Reynolds	36	1	30	5		
Ste. Genevieve	4		4			60
St. Louis County	243	7	223	13		105
St. Louis Medical Society	1,275	95	1,110	70	390	138
Saline	20		20			
Scott	14		14			
Shelby	4		4			45
South Central (Howell, Oregon, Texas, Wright, Douglas)	23		22	1		150
Stoddard	5		5			
Vernon-Cedar	21		18	3		
Webster	2		2			
Totals	3,384	143	2,823	318	$480	$1,942

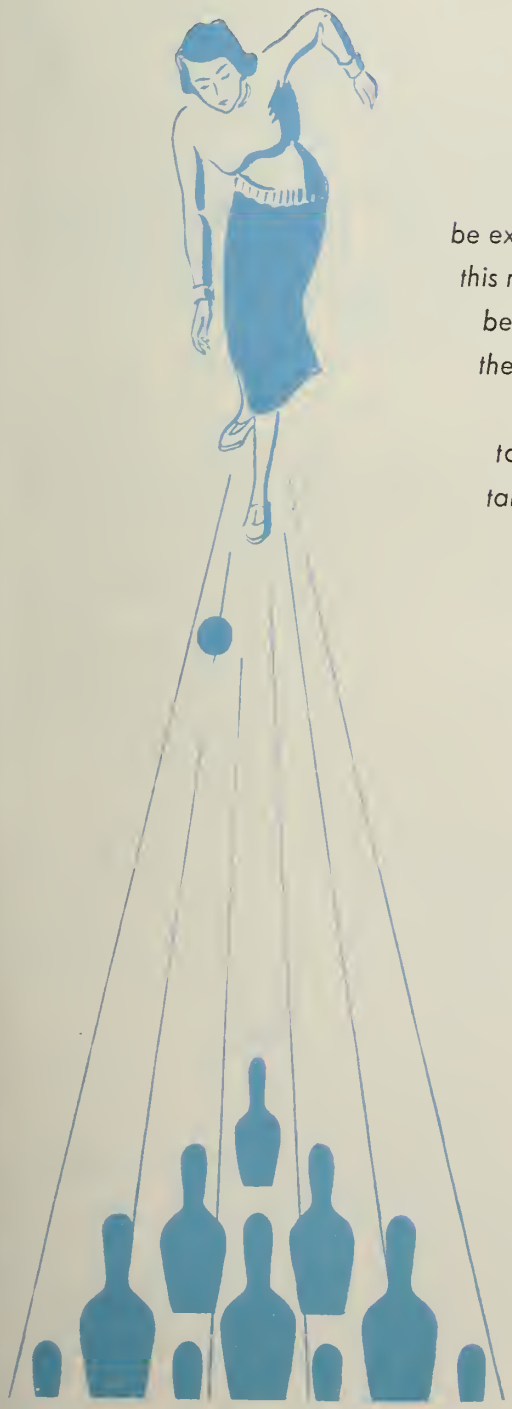
MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for April and May, to which all members are invited, beginning at 1:00 p.m. each clinic, follows:

April 2: Gynecologic and Genitourinary.
April 7: Miscellaneous.
April 9: Breast.
April 14: Skin.
April 16: Cervix.
April 21: Gastrointestinal.
April 23: Head and Neck.
April 28: Skin.
April 30: Miscellaneous.
May 5: Miscellaneous.
May 7: Gynecologic and Genitourinary.
May 12: Skin.

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The physical and emotional distress caused by hot flushes, nervous spells and other symptoms may completely alter the personality and life pattern of the woman at the climacteric. Clinical experience has shown that, in the majority of cases, prompt remission of disturbing symptoms can be expected following the use of **"Premarin."** *In addition, this natural oral estrogen usually imparts "a sense of well-being"...the plus in* **"Premarin"** *therapy which enables the patient to resume an active and enjoyable existence. Three potencies of* **"Premarin"** *permit the physician to adapt therapy to the particular needs of the patient: tablets of 2.5 mg., 1.25 mg., and 0.625 mg., also liquid containing 0.625 mg. in each 4 cc. (1 teaspoonful). While sodium estrone sulfate is the principal estrogen in* **"Premarin,"** *other equine estrogens ...estradiol, equilin, equilenin, hippulin...are probably also present in varying amounts as water soluble conjugates.*

CONJUGATED ESTROGENS (equine)

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May 14: Breast.
May 19: Gastrointestinal.
May 21: Cervix.
May 26: Skin.
May 28: Head and Neck.

CONFERENCE FOR POOR SIGHTED AND BLIND CHILDREN TO BE HELD

A conference for mothers of extremely poor sighted or blind children 6 years of age and under will be held at the Missouri School for the Blind, St. Louis, April 19 through April 21. Mother and child may remain at the school throughout the conference without charges of any kind.

Free medical examinations will be given the children whose mothers' applications to attend the conference are accepted. The school medical director, ophthalomologist, a psychiatrist and others will be available for conferences with parents.

Robert H. Thompson, superintendent, states that so many mothers of blind or near blind children ask advice during their children's early years of training that he felt such a conference would be of great value. He stressed the importance of maintaining as normal an atmosphere as possible for the visually handicapped child. The child must be taught to carry his load of personal and family responsibilities. Parents must avoid their frustration regarding the child's handicap. Other children in the family must be taught to permit their handicapped brother or sister to have a normal place in the family circle. All of these areas will be covered by competent speakers at the conference.

Those parents desiring to attend the conference should apply in advance to the superintendent at the school, Robert H. Thompson, Superintendent, Missouri School for the Blind, 3815 Magnolia Avenue, St. Louis 10, Mo.

SOCIETY PROCEEDINGS

FOURTH COUNCILOR DISTRICT

OTTO W. KOCH, CLAYTON, COUNCILOR

St. Louis County Medical Society

The St. Louis County Medical Society met February 11 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

The secretary reported that Group Hospital Service was unwilling to handle payments for Group 910 on an individual basis. Dr. Steubner moved that the secretary send notice to the members of the date the annual payments fall due, and that if payment was not received by the specified deadline, the members who were delinquent would be dropped from Group 910 without recourse. The motion was passed.

Dr. McLean moved that the Society go on record as favoring a Wednesday night for the proposed combined meeting of the St. Louis Medical and Dental societies with the County Medical Society next fall. The motion was passed.

Curtis H. Lohr, M.D., Clayton, gave an interesting and informative talk on "County Hospital Problems," tracing the development, policies and work of the hospital from its founding in 1931 to the present time.

Meeting of February 25

The Society met February 25 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

J. R. Nakada, M.D., chairman of the radio committee, reported that Station KXLW was planning to make fifteen minutes of radio time available to the St. Louis County Medical Society every one to two weeks for a medical program as a public service feature. Dr. Nakada requested that members of the Society volunteer to write scripts for the program on medical topics of seasonal interest.

Otto Koch, M.D., chairman of the entertainment committee, announced that arrangements have been made for the spring meeting to be held at the Sheraton-Coronado Hotel.

The secretary reported that arrangements had been completed with the Medical Society Exchange for the listing and handling of the Society calls. The new telephone number is Jefferson 4131 and will be listed in the forthcoming telephone directory.

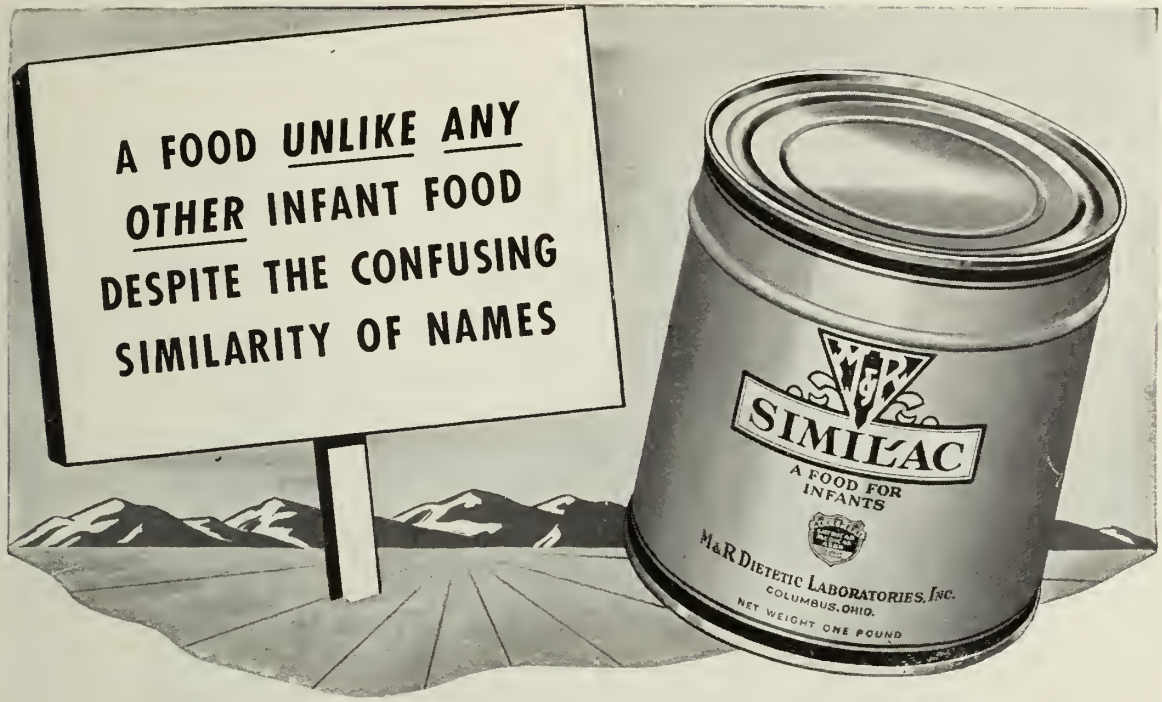
A. N. Arneson, M.D., St. Louis, spoke on "The Role of Surgery in Treatment of Cancer of the Cervix." This was discussed by Drs. Tashma, N. Vitale, Levey, Sharp, Magness, Hayward and Walther.

Robert C. Kingsland, M.D., Secretary.

COUNTY SOCIETY HONOR ROLL 1948

(Societies Which Have Paid Dues for All Members and Date Placed on Honor Roll))

Miller County Medical Society, December 2, 1947.
Camden County Medical Society, December 6, 1947.
Ste. Genevieve County Medical Society, December 10, 1947.
Mercer County Medical Society, December 11, 1947.
Moniteau County Medical Society, December 15, 1947.
Dallas, Hickory, Polk County Medical Society, December 23, 1947.
Perry County Medical Society, December 23, 1947.
Morgan County Medical Society, December 29, 1947.
Audrain County Medical Society, December 30, 1947.
Carter-Shannon County Medical Society, January 3, 1948.
Cass County Medical Society, January 6, 1948.
Laclede County Medical Society, January 9, 1948.
Henry County Medical Society, January 13, 1948.
Platte County Medical Society, January 13, 1948.
Carroll County Medical Society, January 14, 1948.
Lewis-Clark-Scotland County Medical Society, January 16, 1948.
Montgomery County Medical Society, January 21, 1948.
Callaway County Medical Society, January 22, 1948.
Andrew County Medical Society, January 30, 1948.
Webster County Medical Society, February 4, 1948.
Johnson County Medical Society, February 7, 1948.
Holt County Medical Society, February 20, 1948.
Clinton County Medical Society, February 21, 1948.
Bates County Medical Society, February 26, 1948.
Howard County Medical Society, February 27, 1948.
Cape Girardeau County Medical Society, February 28, 1948.
Newton County Medical Society, February 28, 1948.
Stoddard County Medical Society, March 6, 1948.



THE FAT of Similac is not all butter fat, but a homogenized combination of fats that is balanced chemically and metabolically to the infant's requirements.

THE PROTEIN of Similac is rendered soluble to a point approximating the soluble protein in human milk.

THE CARBOHYDRATE in Similac is lactose.

THE MINERALS in Similac are adjusted to closely approximate the minerals of breast milk.

THE CURD TENSION of Similac is the same as that of breast milk — consistently zero.

No other substitute resembles breast milk in all of these essential respects.

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A powdered, modified milk product, especially prepared for infant feeding, made from tuberculin tested cow's milk (casein modified) from which part of the butter fat has been removed and to which has been added lactose, cocoanut oil, cocoa butter, corn oil, and olive oil. Each quart of normal dilution Similac contains approximately 400 U.S.P. units of Vitamin D and 2500 U.S.P. units of Vitamin A as a result of the addition of fish liver oil concentrate.

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"WASHED" AIR IS WHOLESOME AIR

The moment you enter a Rexaired room, you will notice how fresh the air is; how comfortable it is to breathe. Rexair is the amazing new appliance that actually improves the air you breathe.

Rexair takes dust from carpets, bare floors, drapes, upholstered furniture, and from the air itself. Rexair collects dust and dirt in a water bath; discharges cleaner and moistened air back into the room.

The longer Rexair runs, the cleaner and fresher the air becomes. Rexair has no porous bag from which dust can escape back into the air you breathe. Dust is permanently trapped in water. You pour the water down the drain—dust and dirt go with it.

Illustrated at the top of the page is a Rexair with the reservoir cut away to show the water which traps and holds dust so that it cannot escape. You feel better and work better when the air you breathe is clean, fresh, and wholesome.

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SIXTH COUNCILOR DISTRICT

R. W. KENNEDY, MARSHALL, COUNCILOR

Johnson County Medical Society

Thirty-five physicians attended a dinner meeting of the societies of the Sixth Councilor District and adjoining counties at Warrensburg on January 29. The meeting was sponsored by the Johnson County Medical Society.

Delon A. Williams, M.D., Kansas City, spoke on "The Management of Peptic Ulcer."

Morris B. Simpson, M.D., Kansas City, President of the Missouri State Medical Association, discussed "The Responsibility of a State Medical Association to Its Rural Membership."

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

Carter-Shannon County Medical Society

The Carter-Shannon County Medical Society met in the Hyde Building, Eminence, on February 24. The meeting convened at 2:00 p. m. with Frank Hyde, M.D., presiding. The following members were present: Harry Rollins, M.D., Winona; T. W. Cotton, M.D., Van Buren; Frank Hyde, M.D., and W. T. Eudy, Eminence.

Dr. Cotton presented the case history of Addison's disease which was discussed by Drs. Hyde and Rollins. The merits of sulfathiazole, tincture nux vomica and phenobarbital were discussed at length. All members joined in a discussion of hypertension.

Dr. Cotton was appointed delegate to the Annual Session.

W. T. EUDY, M.D., Secretary.

South Central Counties Medical Society

The South Central Counties Medical Society met for dinner at the Antlers Cafe, Mountain Grove, February 20, with the following members and visitors present: J. R. Mott, M.D., Hartville; J. A. Fuson, M.D., Mansfield; L. T. Van Noy, M.D., Norwood; R. W. Denney, M.D., H. G. Frame, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, Jr., M.D., Cabool; T. J. Burns, H.D., Houston; Leslie Randall, M.D., Licking; C. F. Callihan, M.D., Willow Springs; E. C. Bohrer, M.D., and Rollin H. Smith, M.D., West Plains; Guy D. Callaway, M.D., and G. S. Pierce, M.D., Springfield.

After dinner the meeting convened at the home of Dr. Denney and the president, Dr. Callihan, called the meeting to order and the minutes of the last meeting were read and approved.

Owing to the fact that Dr. Ryan, who was chosen delegate, is in Texas for his health and not likely to be able to attend the state meeting, it was voted to substitute Dr. Frame in his stead and to authorized the secretary to notify Dr. Ryan of the change and to express to him the regrets over his ill health and his inability to attend the last two Society meetings and the hopes that he may soon be able to attend.

A letter from Dr. Harsh was read stating that he is now out of practice and expressing a desire to remain a member of the Society on an inactive status. It was voted to remit his dues until such time as he resumes practice.

As the date of the Society meeting would be so near the date of the Annual Session, it was voted to omit the March meeting.

Dr. Callaway spoke on "Tularemia," stressing tularemic pneumonia and the superior value of streptomycin in tularemia, basing most of his remarks on his own experience and observations. Dr. Pierce then followed with more information on streptomycin. The subject was handled so ably as to make it one of the best meetings the Society has had.

A vote of thanks was given the speakers and the Society adjourned to meet in Cabool on April 16 when Dr. Smith will arrange the program.

A. C. AMES, M.D., Secretary.

AMERICAN MEDICAL ASSOCIATION SAYS PUBLIC DEMAND FOR SERVICE AT NIGHT MUST BE MET

American Medical Association
535 N. Dearborn Street
Chicago 10, Ill.

March 9, 1948

To the Editor:

As I mentioned in my "Secretary's Letter" a short time ago, patients over the country are voicing bitter criticism of the medical profession because of their inability to obtain the services of a physician at night. Many letters are being received at American Medical Association headquarters from patients who complain that doctors decline to make night calls.

The March 6 issue of *The Journal of the American Medical Association* contained a lengthy editorial pointing to the need for action in this situation.

I would appreciate it if you, as editor of your state medical journal, would publish the attached story in your next issue, either as an editorial or in your news columns. The article, as you will notice, urges that action be taken by county medical societies. We are sending this story to you because we feel that through your journal it will reach the officers of these county medical societies.

Thanking you and with best wishes, I am

Sincerely yours,

GEORGE F. LULL, M.D., Secretary.

AMERICAN MEDICAL ASSOCIATION SAYS PUBLIC DEMAND FOR SERVICE AT NIGHT MUST BE MET

The American Medical Association calls on county medical societies to meet the public demand for emergency medical service at night.

"From many sections of the United States," says an editorial in a recent (March 6) issue of *The Journal of the American Medical Association,* "complaints have come lately that persons who have called physicians late at night have been unable to secure attendance from either those whom they considered their family physicians or from specialists or, indeed, from any physician."

The American Medical Association says that large county medical societies or urban groups should maintain a physicians' telephone exchange which would take the responsibility for locating physicians if response is not made to the ringing of the telephone in the home or in the office.

The solution is simple and practical, requiring only a minimum of community organization. A number of county medical societies already maintain a physicians' telephone exchange where doctors' calls may be received and doctors located if their office or home tele-

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In its tenth year, Posture Week will again highlight our year-round program of focusing attention on the significance of good posture as an important element in good health and physical fitness.

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1. Arbesman, C. E. et al. Jl. of Allergy 17:275, Sept. 1946.
2. Fuchs, A. M. et al. Jl. of Allergy 18:385, Nov. 1947.
3. Feinberg, S. M. and Friedlaender, S. Am. J. Med. Sci. 213:58, Jan. 1947.

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phones do not respond. Such an exchange can be utilized as at night or on holidays, simply by furnishing the exchange with a list of physicians who are able and willing to make night calls. Such physicians would probably include the younger general practitioners, newcomers to the community, and others in general practice. If such a roster were available, and its availability widely publicized, night calls for medical service would soon gravitate to this center and the patient would be assured the services of a physician.

Under such a system the necessity for calling many doctors would be eliminated. Two calls at most would be necessary. Where there is no physicians' telephone service, it might be possible to have the hospitals cooperate by handling such night calls.

The Medical Society of the District of Columbia and the Milwaukee County Medical Society have found such a plan practical, as have a number of other societies.

By this simple and practical expedient, which is doubtless in effect in modified form in a number of communities, the sick can be served and the medical profession can redeem its pledge of unselfish public service.

It is highly important that where such arrangements exist they be brought to the attention of the lay people in the community through appropriate public channels, not once but repeatedly, to keep the shifting populations well informed.

Few problems in the field of medical service have aroused so much public discussion. Whether resentment against physicians is justified or not, it does harm. The solution for this problem is so eminently simple and would reflect so favorably upon physician-patient relationships that medical societies everywhere are urged to give it serious consideration immediately.

BOOK REVIEWS

Handbooks on Fractures. By Duncan Eve, Jr., M.D., F.A.C.S., Surgeon-in-Chief, Nashville, Chattanooga and St. Louis Railroad; District Surgeon, Louisville and Nashville Railroad; Associate Professor of Surgery, Vanderbilt University School of Medicine; Attending Surgeon, St. Thomas Hospital, Nashville, Tennessee. In collaboration with Trimble Sharber, A.B., M.D., Attending Surgeon, St. Thomas Hospital, Nashville, Tennessee. Illustrated. St. Louis: C. V. Mosby Co. 1947. Price $5.00.

This is another excellent short treatise on fractures. It was written to serve as a guide to "the younger and more occasional worker" in this field.

Stressing details of treatment, rather than mechanism of injury and signs and symptoms of fractures, this book will appeal mainly to the general surgeon and general practitioner who wishes to keep abreast of recent developments in the field of fracture therapy.

A well written chapter on compound fractures concisely states present day concepts of treatment of these injuries, including the valuable contributions made by the military surgeons of World War II. R. M. O.

A Manual of Fractures and Dislocations. By Barbara Bartlett Stimson, M.D., Assistant Professor of Clinical Orthopedic Surgery, College of Physicians and Surgeons, Columbia University, New York City; Associate Attending Surgeon, Presbyterian Hospital and Vanderbilt Clinic, New York City. Second Edition. Thoroughly Revised. Illustrated with 98 Engravings. Philadelphia: Lea & Febiger. 1947. Price $3.25.

This is, as it is stated by the author in the preface, a manual primarily intended for the use of medical students. It is also of value to the general practitioner in that it is meant to serve as a guide to the large mass of material that has been published in magazine articles and textbook form in recent years. No attempt is made to enlarge the scope of the book beyond that of a manual in this second edition. A list of reference books is appended for the reader who wishes to peruse a given topic in detail or who has need for detailed operative technic or for the full discussion of theories, procedures and such.

This book provides an organized guide to the general principals involved in the care or treatment of fractures and dislocations and supplies the reader with a brief but clear idea as to the application of these general principals to specific lesions which may confront the student, intern or resident, and the practitioner.

The book is divided into four parts: "General Considerations," "The Upper Extremity," "The Trunk" and "The Lower Extremity." Each of the last three sections is preceded by a table of "percentage of occurrences" and the figures quoted are based on some 21,000 fractures and dislocations treated at a voluntary hospital. The first section or part deals with the general considerations under the headings of definition, classifications and signs, symptoms and the diagnosis of fractures. Bone repair is taken up in a single chapter. Emergency treatment is discussed and is followed by the "permanent treatment" of fractures. The reduction and splinting of fractures and the use of traction and suspension is covered. Rehabilitation of the fracture patient is stressed. The proper care of the compound fracture also is stressed. A chapter is devoted to the details of emergency splinting, use of adhesive strapping, plaster-of-paris technic, local anesthesia, aspiration of joints and the application and use of traction apparatus.

The injuries of the upper and lower extremities and the trunk are taken up and discussed in the usual sequence. A brief but clear discussion of all the common fractures and dislocations is given. Several blank pages are included at the close of each chapter for use of the student in taking of notes, data or memoranda.

L. E. R.

Methods of Diagnosis. By Logan Clendening, M.D., Late Professor of Clinical Medicine and History of Medicine, University of Kansas School of Medicine. And Edward H. Hashinger, M.D., Professor of Clinical Medicine, University of Kansas School of Medicine. With 143 Illustrations. St. Louis: The C. V. Mosby Company. 1947. Price $12.50.

This volume embraces a text on physical diagnosis and a discussion of differential diagnosis. It is divided into four parts. Part one is devoted to a discussion of the principles of diagnosis with emphasis on the judgment of evidence and reasoning according to the laws of logic. Part two consists of a discussion of the technic of history taking, interpretation of symptoms and the general procedures used in physical diagnosis. In part three the symptoms and signs of disease processes are discussed according to the anatomic regions involved and organs effected. Part four includes an evaluation of laboratory studies and special procedures that may be needed in diagnostic work, including roentgen ray diagnosis. The illustrations and drawings are instructive.

The informal style makes the book easy reading and it can be read with profit by students and internists.

R. V. P.

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From where I sit, America can be mighty grateful for her five million farmers...for their productivity, hard work, temperate living—of which Will's moderate glass of beer is proof!

Joe Marsh

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Urology in General Practice by Nelse F. Ockerblad, B.S., M.D., F.A.C.S., Professor of Clinical Urology, University of Kansas School of Medicine; Senior Attending Urologist to St. Luke's Hospital; Consulting Urologist to the Children's Mercy Hospital, Kansas City, Mo.; Diplomate of the American Board of Urology. The Year Book Publishers, Inc., Chicago. 1947. Price $5.75.

The author has edited a second edition which followed an edition written several years previous which was very well received by the general profession.

Realizing that the better trained general practitioner today has had a rotating internship which included all the specialties and which gave him some clinical, as well as surgical, experience along special lines, the author attempts to inform him and acquaint him with the different urologic procedures which will in turn make him a better diagnostician.

The first part of the book covers kidney pathology including the various types of nephritis. Urologists have always frowned upon discussion of nephritis in urologic texts because it definitely is an internal medical problem and does not belong in the realm of renal surgery.

One who has done urology for any number of years realizes only too well the futility in attempting to make a cystoscopist in a short postgraduate course or to try to teach the readers of this text cystoscopy by giving them a few lines of description about the many and varied pathologic conditions which appear in the urologic tract because it requires years of experience and a wealth of clinical material before an authenic diagnosis can be made. The rationale applies to the bronchoscope as well as to the cystoscope.

The author also relates in easy reading the methods of entering a distended bladder which has become involved in a vesicle neck obstruction. Every urologist has had innumerable cases in which he was forced to wade through blood after the practitioner had made many unsuccessful attempts to catheterize the patient. Many hours of agony and prolonged convalescence could have been avoided had the skilled man with special training and proper armamentarium been called primarily.

The book is concise and quite comprehensive to one of urologic training and could be utilized as a "compen" by the urologist. The book could well be used as a text in nursing schools except too much emphasis is placed upon diagnosis and too little on treatment. The author was wise in not attempting to encourage the novice to attempt surgical correction for the many urologic defects which he describes.

His article upon urinary lithiasis is most refreshing and certainly is one subject that the practitioner will encounter in his daily routine.

It appears as though the author steps into the field of gynecology and obstetrics when he discussed at considerable length the Huhner and Rubin tests.

His article on sulfonamides and ambiotics is concise and most timely. O. J. W.

Synopsis of Neuropsychiatry. By Lowell S. Selling, M.D., Ph.D., Dr.P.H., F.A.C.P., Director, Division of Mental Health, Florida Department of Health; Director, Psychopathic Clinic, Recorder's Court, Detroit, Michigan; Assistant Professor of Criminology, Medical Jurisprudence and Social Hygiene, University of Illinois College of Medicine; Lecturer in Psychology, Wayne University; Visiting Professor of Psychology, Iowa State College. Illustrated. Second Edition. St. Louis: C. V. Mosby Company. 1947. Price $6.50.

This book has reached a second edition, which evidently shows a demand for an abbreviated exposition. As a synopsis, the presentation is amazingly accurate and competent. One rarely encounters a book in which so few objectionable statements are encountered. As with nearly all works on the subject, the reader will scarcely grasp the extent of the intrusion of neurotic illness into all aspects of medical practice and of daily life. Not only do symptoms imitate almost every organic syndrome but neurotic ways of thinking color the actions occasionally of the office holder, the executive, the teacher, the clerk and the neighbor. The student needs to learn these things. The work is recommended for students, general practitioners and even specialists for quick reference. L. B. A.

Practical Clinical Psychiatry. By Edward A. Strecker, A.B., A.M., Sc.D., Litt.D., LL.D., M.D., Professor of Psychiatry, School of Medicine, University of Pennsylvania; Franklin G. Ebaugh, A.B., M.D., Professor of Psychiatry, University of Colorado, School of Medicine; Director, Colorado Psychopathic Hospital; and Jack R. Ewalt, M.D., Professor of Neuro-Psychiatry; Director, Galveston State Psychopathic Hospital, University of Texas Medical Branch. Section on Psychopathologic Problems of Childhood by Leo Kanner, M.D., Associate Professor of Psychiatry, Johns Hopkins University School of Medicine. Sixth Edition. Philadelphia, Toronto. The Blakiston Company. 1947. Price $5.00.

This text is in its sixth edition, which fact is sufficient evidence of its adequacy and any criticisms, therefore, must be regarded as matters of opinion. The book is undeniably hard going and one wonders how much the student, who must read as he runs, will really absorb. A contrast is offered by the translations of Kraepelin's expositions which reaed like works of fiction. Then, too, schizophrenia almost gets lost falling as it does well along after a consideration of numerous relatively unimportant topics. A better arrangement would probably be to place the outstanding subjects first.

Once more, one wonders if the student will grasp the all prevading place of neurosis in medical and daily life, as it is so important that he should. The account does not show how the conversion phenomenon invades the field of every specially and every region of the body imitating numerous physical ailments. Nor is the reader told, say, of the paranoid army officer, the neurotic soldier, the resentful school teacher and the doctor with a fixed idea. The neuroses are not something one meets just in the psychiatric clinic. Nevertheless, the book can be recommended heartily. L. B. A.

Years After Fifty, The, by Wingate M. Johnson, M.D., Professor of Clinical Medicine and Chief of Private Diagnostic Clinic Bowman Gray School of Medicine of Wake Forest College with a Foreword by Morris Fishbein, M.D., Editor, *Journal of the American Medical Association*. New York and London. Whittlesey House, McGraw Hill Book Company, Inc. 1947. Price $2.00.

"The Years After Fifty" by Wingate M. Johnson, M.D., is a short readable volume of advice to older people. It is written for the laymen rather than the doctor. It is concisely written and easy to understand.

There are numerous practical dissertations on such subjects as the "bugaboos of old age" in which he takes up such subjects as cancer, sexual importance, economic insecurity and death.

His four pages on hypotension are more than are in many textbooks and well worth reading.

He takes up the body by systems and goes into some detail about the more common diseases all in a delightfully informal manner.

All in all, it is a book to be recommended to one's older patients and to be read with profit by oneself. P. M. N.

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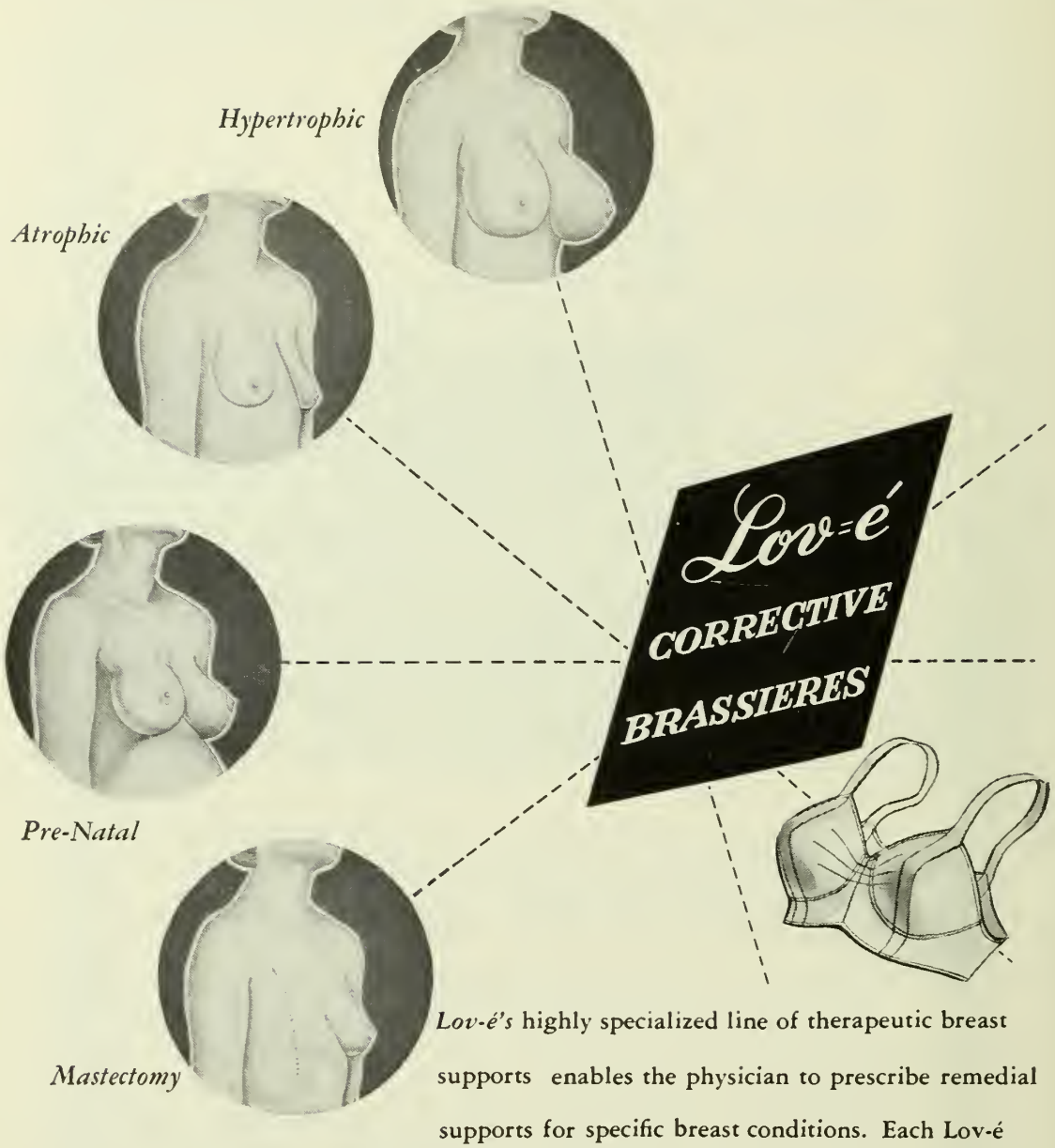
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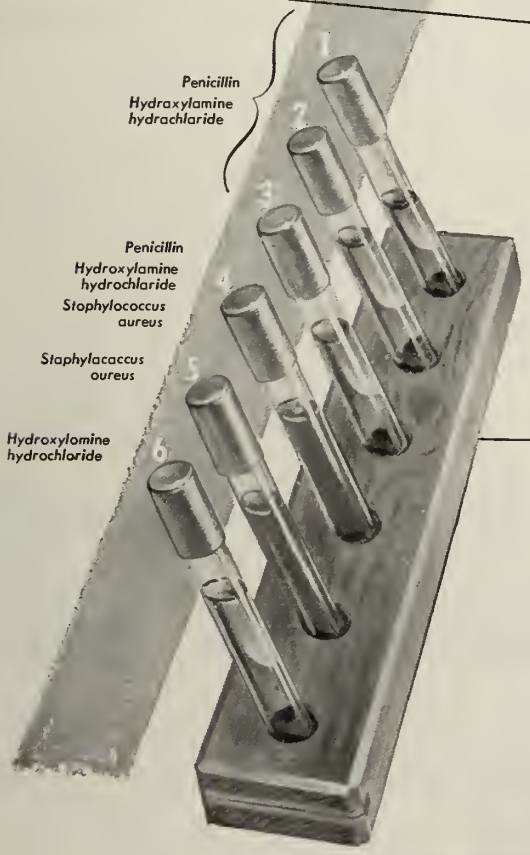
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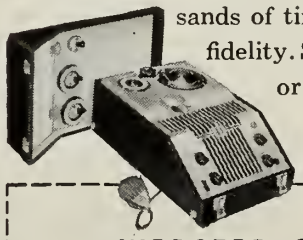
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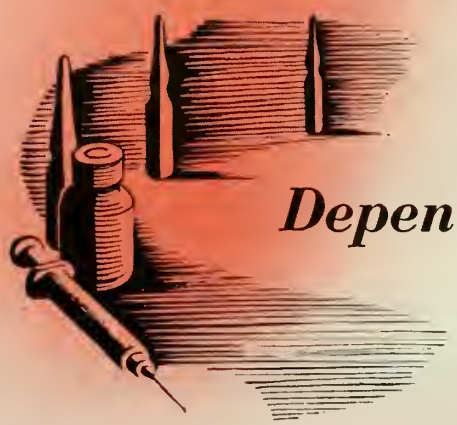
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2. *J. Clin. Endo.* 3:89 *(Feb.)* 1943.
3. *J.A.M.A.* 134:1141 *(July 26)* 1947.

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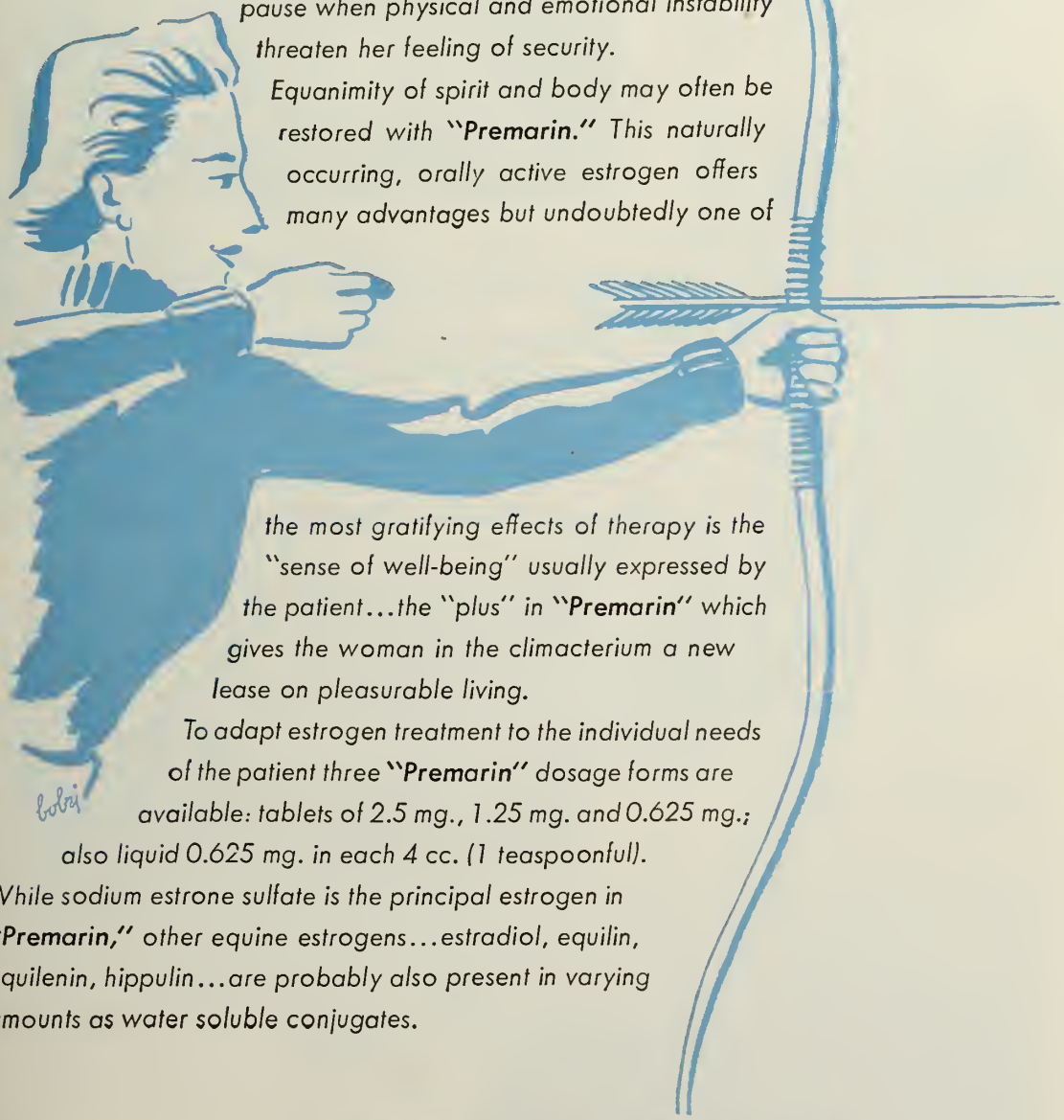
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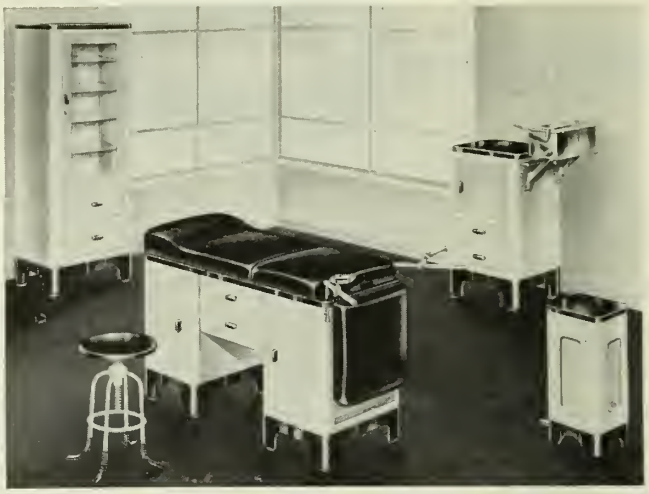
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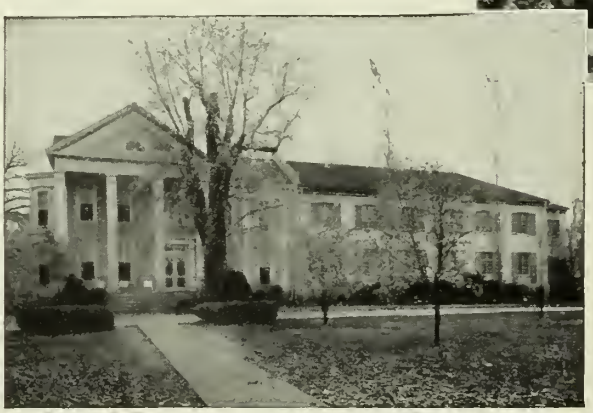
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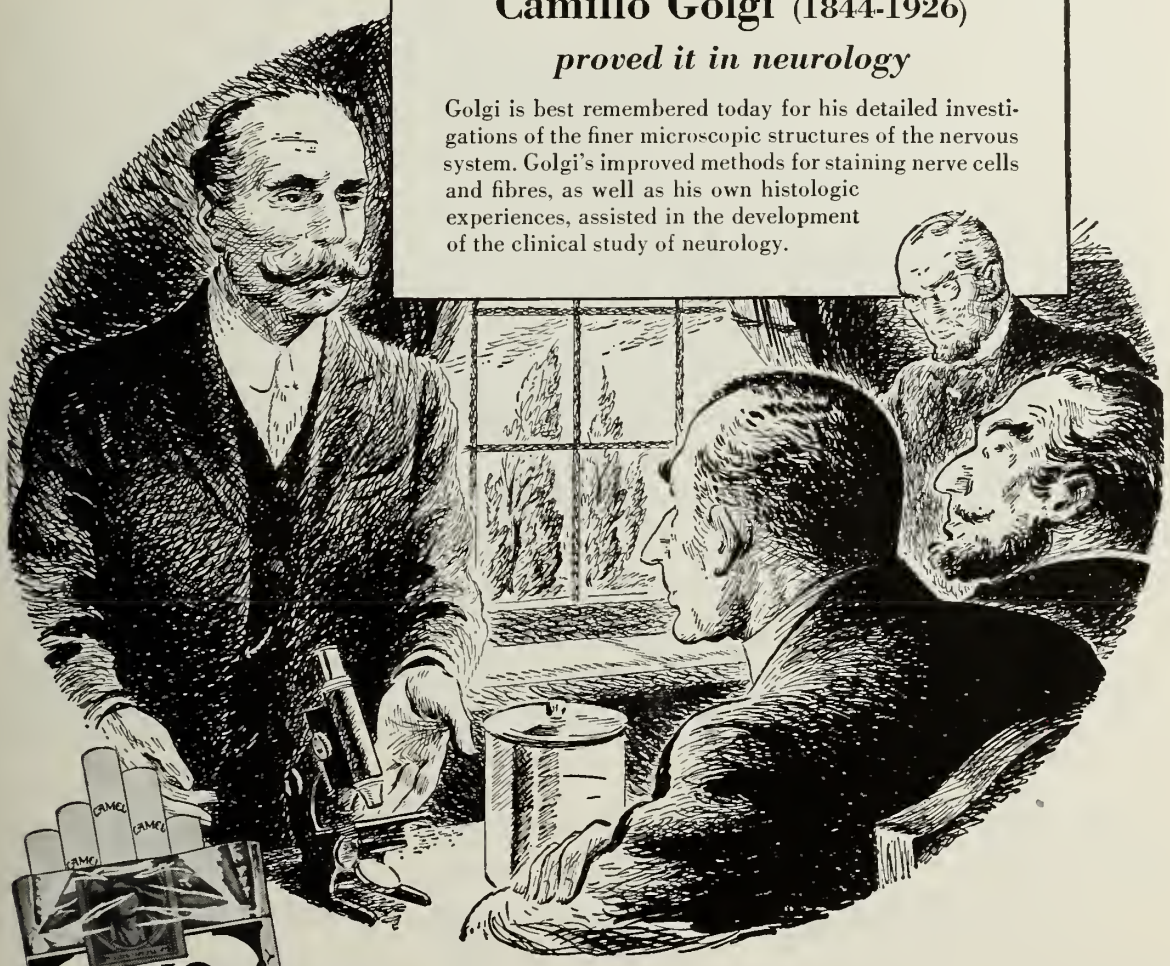
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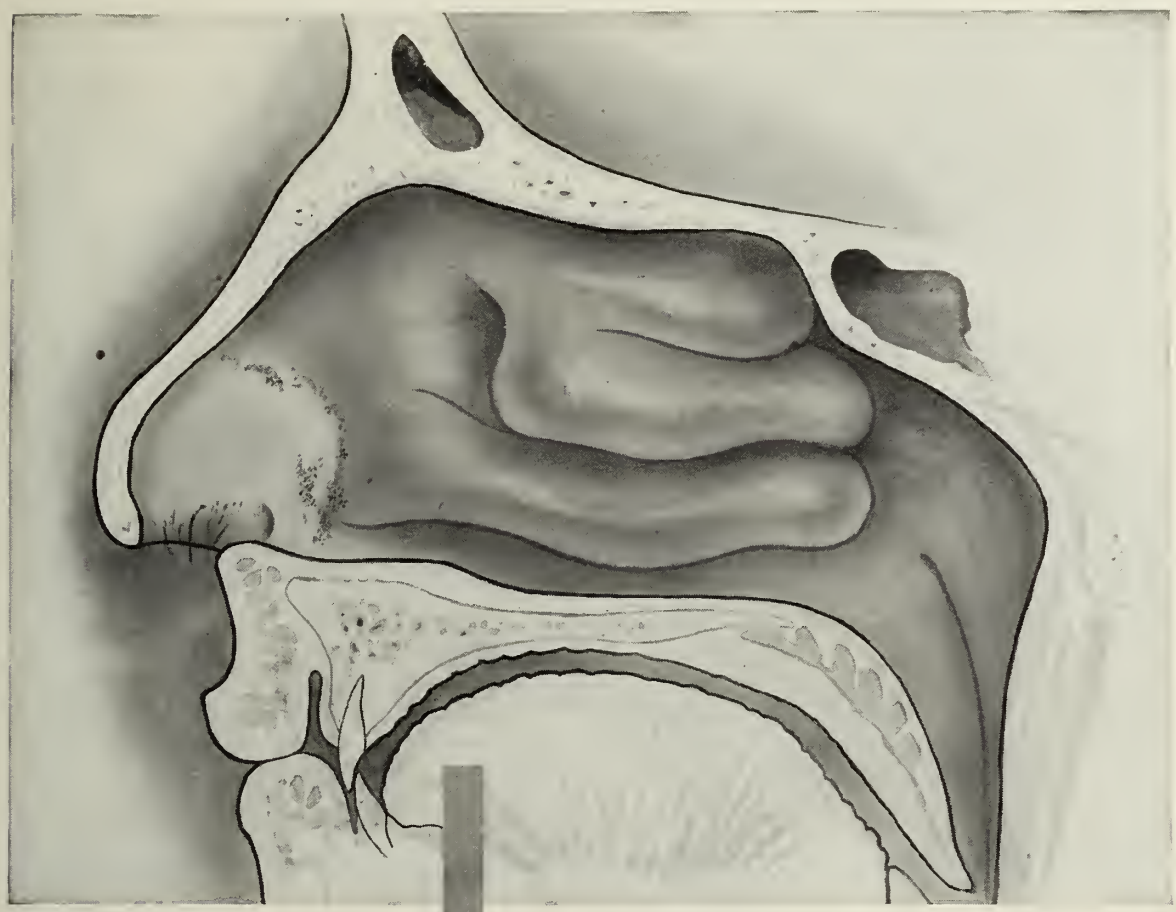
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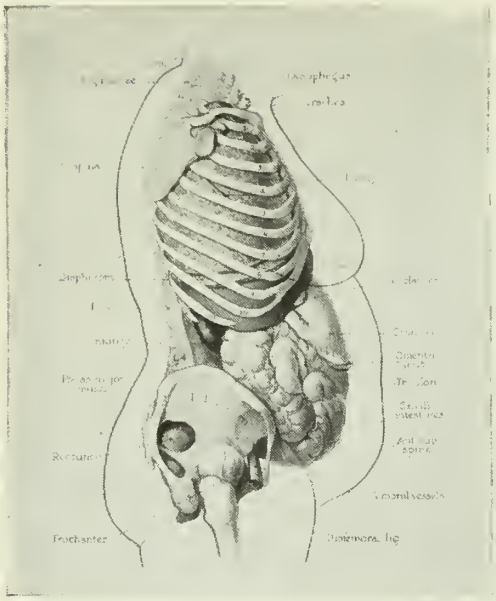
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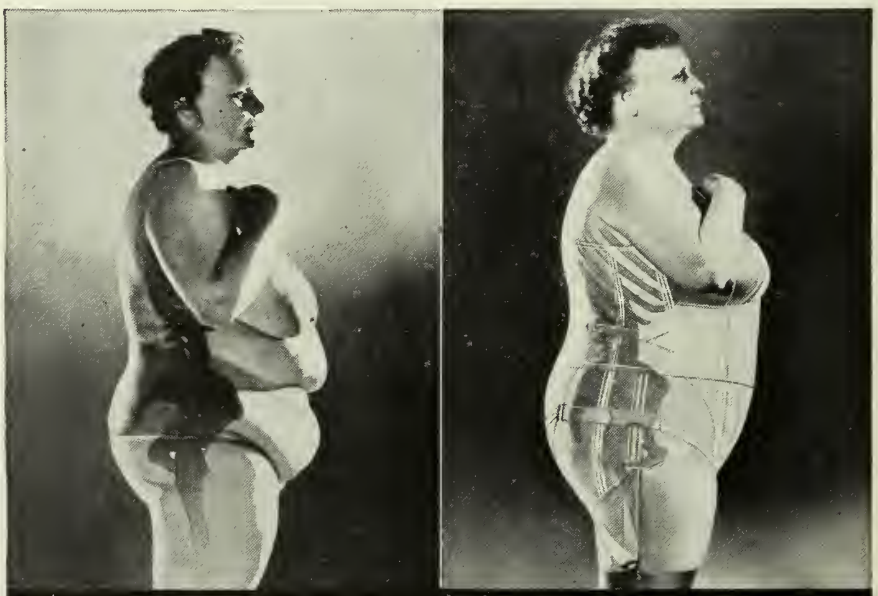
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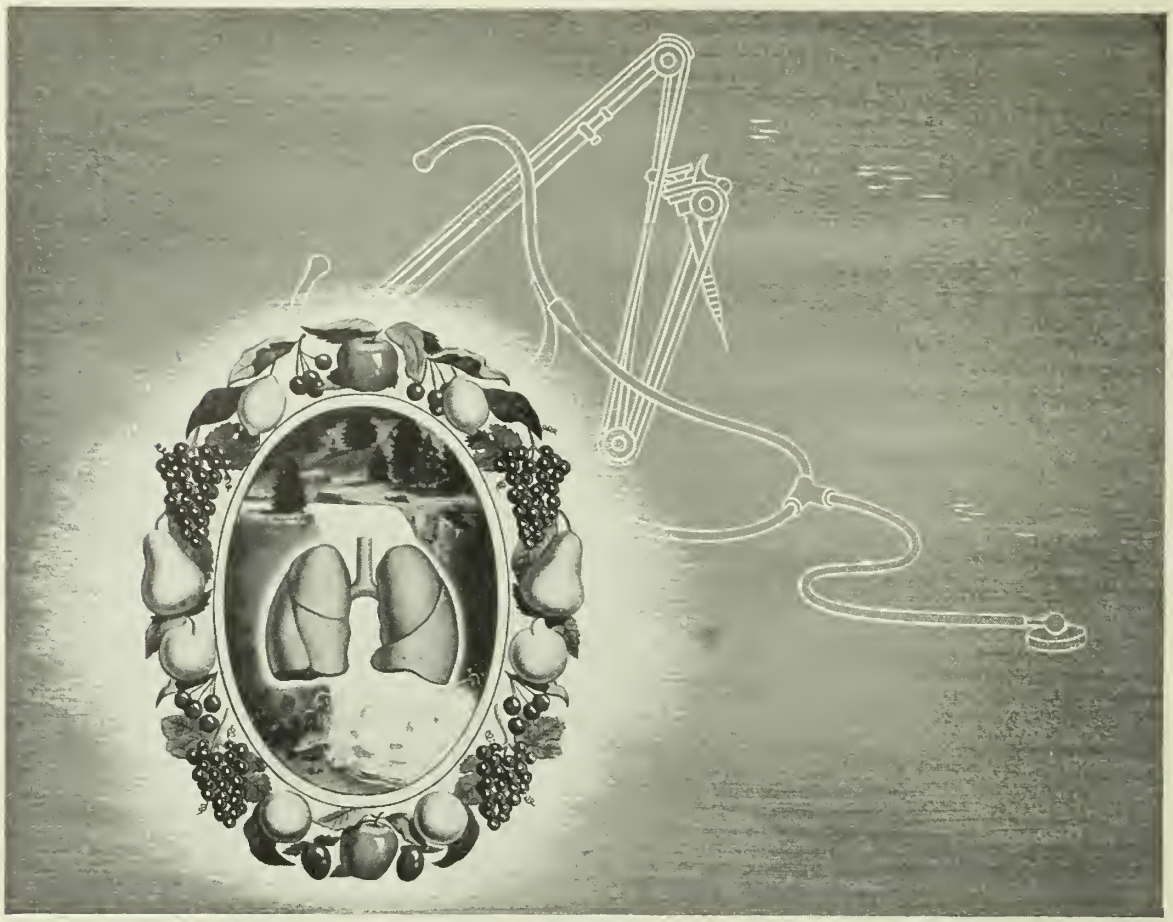
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Morgagni had no microscope. But the Prussian Rudolf Virchow (1821-1902) *did*. So he found that, in diseased flesh, it was really the *cells* which were changed or disordered.

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VOLUME 45 | MAY, 1948 | NUMBER 6

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CANCER OF THE COLON AND RECTUM

CURRENT TRENDS IN SURGICAL MANAGEMENT

JOHN MODLIN, M.D., *Columbia, Missouri*

DURING the last decade substantial progress has been achieved in many fields of surgery and it is the purpose of this article to discuss recent advances in the management of cancer of the colon and rectum. These lesions account for about 7 per cent of all cancer,[1] and in the gastrointestinal tract occur next in frequency to cancer of the stomach. When one considers that with proper treatment, approximately one of every two such lesions can be cured permanently,[2,3,4] it becomes important that surgical resection be extended to as many patients as possible. In the last ten years there has been a steady increase in life expectancy following such surgery, but it should be stated that this improvement in the outlook for cure is the result of refinements in surgical management and is not due to earlier recognition. It is apparent that surgery of the large bowel has far outstripped efforts aimed at earlier diagnosis and it would seem that significant future increase in the salvage from large bowel cancer will be the result of improvements in diagnosis.[1]

In recent years there has been a gradual but steady decline in mortality following surgery of all types[5] (figure 1). This reduction in risk is the result of many factors, some of the more important of which include (1) better knowledge of physiology as applied to the surgical patient, with correction of water, protein, electrolyte and vitamin deficiencies prior to operation, (2) improvement in anesthesia, (3) use of antibiotics, and (4) correction of anemia and lowered blood volume by means of frequent whole blood transfusions prior to, during and following operation. This decline in mortality, as applied to surgery of the large bowel, has permitted more patients to survive their immediate operation and thus has served to increase the permanent salvage from malignant lesions of the colon.[3,9] In addition, the lowered risk of operation has occurred during a period when resectability rates have steadily increased, thus again increasing the opportunity for a large number of permanent cures.

The trend toward increased resectability rates with lowered immediate operative mortality has been quite generally reported throughout the United States[1,2,3,6,7,8] and the experience with cancer of the large bowel at The Ellis Fischel State Cancer Hospital has been, on the whole, quite similar to that reported elsewhere. In a series of 120 patients treated by Bricker and by Sugarbaker between the years of 1940 and 1944, a resectability rate of 66 per cent and an operative mortality of 16 per cent were reported.[9] During the last year 35 patients with cancer of the colon and rectum have



Fig. 1. Decline in general operative mortality (Lehman[5]).

From the Department of Surgery, the Ellis Fischel State Cancer Hospital.

Presented at the Ellis Fischel State Cancer Hospital Staff Meeting of February 25, 1948.

been seen, 31 of which were resected, a resectability in this small series of 88 per cent (tables 2 and 3). There were no deaths in this group of patients in which the average age was 66 years. It was neces-

Table 1. *Carcinoma of the Colon and Rectum at The Ellis Fischel State Cancer Hospital.*

Years	No. of Cases	Resectability Per Cent	Operation Mortality Per Cent
1940-1944	120	66	16
1947-1948	35	88	0

sary to remove additional structures in almost one fourth (22 per cent) of these during the last year, and an additional 22 per cent of the operations were classified as palliative resections due to distant spread which precluded hope of cure.

It is important to emphasize that not all physicians are aware of the present day lowered risk

Table 2. *Carcinoma of the Colon and Rectum at The Ellis Fischel State Cancer Hospital 1947-1948.*

	No. of Cases	Deaths
Resection for cure	24	0
Palliative resections	7	0
Nonresectable	4	0

of operation in these cases. As Lehman[5] has pointed out, the opportunity for surgery to accomplish the most good for the greatest number of patients depends considerably upon its reputation among physicians other than surgeons. Many of these men

Table 3. *Cancer of the Colon.*

		Mortality Exteriorization Per Cent	Mortality Primary Anastomosis Per Cent
Billroth	1889		60
Paul	1895	40	66
Mikulicz	1903	16	
Rankin	1927	16	
Gibbon & Hodge	1941	29	13
Lahey	1942	11	
Stone & McLanahan	1942		10
Wangensteen	1943		2
Jones	1943	6.5	
Whipple	1944		9
White & Amendola	1944		11
Waugh & Custer	1945		4
Meyer	1945		5
Coller	1945		4
Lahey	1946	2.7	
Allen & Welch	1947		2
Hinton & Localio	1948		2

base their judgment of operative risk and resectability upon the teachings of ten to fifteen years ago and since they give the primary advice leading to surgical consultation, it is imperative that the present day surgical outlook be emphasized.

ANATOMY

In order that the surgeon have a proper grasp of the principles of treatment of cancer of the large bowel, a knowledge of the blood and lymph supply of the colon and rectum is essential (figure 2). The ascending colon and a large part of the transverse colon obtain their blood supply from the superior mesenteric artery, while the left colon

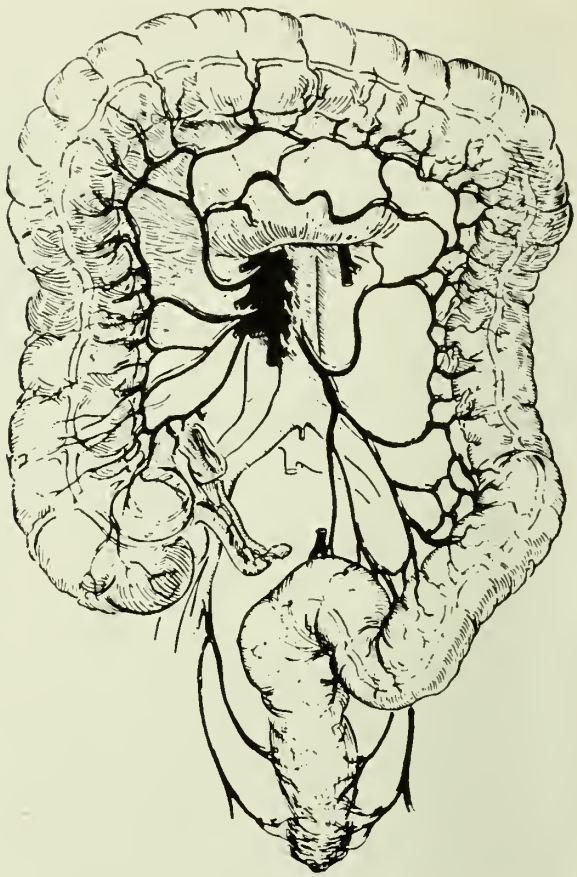


Fig. 2. Blood supply colon and rectum (Jones and Shepherd[37]).

and rectum are supplied by the inferior mesenteric artery, with additional supply to the rectum from the hemorrhoidal branches of the hypogastric arteries. While it is well known that the blood supply to the large intestine is less abundant than that of the small intestine, nevertheless, with proper selection of cases, the blood supply is quite sufficient to permit primary anastomosis in any portion of the large bowel.[11]

Because the lymphatics follow the arteries, it is necessary in operating for cancer of the colon, to ligate the blood supply close to its origin in order to permit removal of the greatest amount of lymphatic tissue.

PATHOLOGY

Many surgeons and pathologists believe that polypi of the large bowel constitute precancerous lesions. Helwig[12] found polypi of the colon and rectum in 9.5 per cent of 1,460 consecutive autopsies. He believes that, while it is true that carcinoma of the large bowel may develop directly from the mucous membrane, the majority arise in preexisting benign polypi. There is, however, a wide divergence of opinion in the literature concerning the significance of polypi of the colon and rectum. In a series of 235 rectal polypi examined at the Henry Ford Hospital in Detroit, 8.4 per cent of the patients who had their polypi promptly removed exhibited can-

cer of the rectum within five years. However, in this same series forty-three patients did not have their polypi removed and only 3 (6.9 per cent) later developed malignancy within a corresponding five year period. It is obvious that the surgeon should view polypi of the colon and rectum with suspicion, but although the majority of polypi occur in the rectum and sigmoid colon,[12] the surgical management of these lesions is a problem requiring considerable judgment. Low rectal polypi should be removed promptly and subjected to microscopic examination, with subsequent therapy based on the presence or absence of malignancy. Higher lesions prove more difficult to treat since the existence of malignancy is sometimes difficult to prove, and since local removal is often times technically difficult. In general, the type of treatment employed should be individualized to the particular patient rather than the patient to a standardized procedure, but whenever possible the goal should be complete excision of these lesions.

Once established, cancer of the large bowel tends to increase in size locally for a considerable length of time before distant spread occurs. Serosal involvement and later extension to neighboring structures commonly occurs[14] and it is important that the surgeon realize that such fixation does not necessarily mean that a given case is beyond resection for cure. Coincident removal of all or parts of such structures as the uterus, vagina, bladder, prostate, abdominal wall, spleen, stomach, liver and gallbladder is commonly performed today.

These tumors tend to metastasize via lymphatics and by venous channels. The latter method of spread results in secondary involvement of such structures as the liver and lungs, and the finding of vein invasion on microscopic examination of the resected specimen is of ominous significance.[14] It should be mentioned that vein invasion may exist in the absence of lymph node metastasis. Nerve sheath invasion may occur and is invariably a bad prognostic sign.

The pathways of lymphatic spread from lesions in the various areas of the large bowel can be predicted with reasonable accuracy and should be recalled by the surgeon at the time of every operation for large bowel malignancy in order to effect wide removal of the lymph node draining areas. Involvement is usually in orderly progression, but at times lymph node groups may be bypassed. Retrograde involvement of lymph nodes takes place only after the nodes draining the tumor area have become completely involved with tumor.[15,39] Gilchrist and David[4] recently have reported an incidence of retrograde metastasis in seven of 156 tumors below the promontory of the sacrum.

INCIDENCE OF OCCURRENCE

The distribution of carcinomas of the large bowel is fairly characteristic, 75 per cent being found in the rectum, rectosigmoid and sigmoid colon.[35,36] The remaining 25 per cent are about equally distributed throughout the rest of the colon (except for the cecum, where there is a slightly higher incidence). It is significant that the distribution of benign polypi in the colon and rectum is quite similar to that of carcinoma.[12]

As is frequently the case with cancer in other locations, cancer of the colon and rectum is most commonly seen between the sixth and seventh decades.

SYMPTOMATOLOGY AND DIAGNOSIS

The clinical picture in any given case of cancer of the large bowel will vary according to the location of the lesion, degree of ulceration, infection and obstruction and duration of the tumor. The advanced lesion is detected easily as a rule, but attention must be directed to earlier abnormalities of colon function in order to bring about earlier recognition. It has been repeatedly stressed[1,33] that one or more of the following triad of symptoms can be elicited in more than 97 per cent of patients with cancer of the colon and rectum: (1) bleeding from the rectum, (2) alteration of bowel habits (diarrhea or constipation), (3) abdominal distress.

The symptoms arising from carcinoma of the right colon may differ decidedly from those in the left colon. Obstruction is less common in the right colon and the presence of weakness and severe anemia, or a palpable right abdominal mass, may be the initial finding. It is important to stress that although such patients may appear entirely too far advanced for curative surgery, the restoration of



Fig. 3. Carcinoma of cecum.



Fig. 4. Diverticulosis and diverticulitis with two separate carcinomas (LeMone[38]).

a normal hemoglobin value by repeated whole blood transfusions may completely reverse this picture.

It cannot be too strongly emphasized that more than 60 per cent of all cancer of the large bowel can be detected by means of digital rectal examination. In addition, sigmoidoscopic examination should always be done, with biopsy of any visualized lesion. Roentgenologic methods (barium enema and scout film of the abdomen) are highly accurate in the diagnosis of lesions above the reach of the examining finger and the sigmoidoscope (figure 3). Double contrast enemas are employed when necessary. The finding of multiple lesions and complicating factors in a small percentage of cases is sufficient indication to compensate for the additional time and expense involved[38] (figure 4). It is regrettable that as high as 75 per cent of patients whose disease is diagnosed as cancer of the large bowel have been treated previously for hemorrhoids.[34]

TREATMENT

In considering the present status of the treatment of cancer of the large bowel it is important that the surgeon keep uppermost in mind one general principle, i. e., the wide removal of the primary lesion, with removal of as great a portion of the lymphatic drainage area as possible. This principle applies to the therapy of malignant tumors in any location within the colon and rectum, and other considerations of technic are of secondary import. As Rankin,[2] recently stated, it would seem unnecessary to point out that *any operation for cancer of the rectum which is predicated upon any thesis other than the widespread dissection of node bearing areas is excessively vulnerable.* The recent rediscovery and awakened interest in sphincter saving procedures makes it important to point out the limitations of such operations as far as cure of cancer is concerned. This unfortunate trend apparently has been based on such reports as those of Gilchrist and David[15] (1938) and Coller, Kay and McIntyre[16] (1940) which have demonstrated the relative infrequency of retrograde lymphatic spread in carcinoma of the rectum. Waugh and Custer[17] state that "supported by pathologic evidence furnished by Gilchrist and David and further extended by unpublished work of Glover, the curable malignant lesions of the lower part of the large bowel, seldom if ever, metastasize in a retrograde manner. Various surgeons have contrived procedures both to cure disease and to preserve the sphincter." In their report of 1938, Gilchrist and David[15] advocated the Miles resection for carcinoma of the rectum and rectosigmoid, and it is therefore interesting that their work should be the basis for recent revival of the sphincter saving operation.

It would seem, however, that infrequent retrograde spread should not blind one to the necessity for wide resection of the proximal lymph node drainage area. It is difficult to conceive of any sphincter saving procedure being as radical as a Miles resection. Gilchrist and David[4] (1947) recently have made an exhaustive survey of 200 large bowel resections for cancer and their findings are significant in that an average of fifty-five lymph nodes per specimen were examined. This careful study indicates without question the need for the widest possible resection for cancer of the rectum. They found that, in lesions at or below the peritoneal reflection of the rectum, local recurrences developed in 23 per cent of the cases. It therefore would seem that in the treatment of cancer of the rectum and rectosigmoid colon, pull through and sleeve type resections, which are at best not more than local resections, should be abandoned entirely in favor of the Miles resection. As pointed out by Gilchrist and David,[4] the question should be "Can one remove all the cancer?" and not "Can one sew two ends of bowel together?" Such an anastomosis is not difficult for the surgeon skilled in abdominal surgery, but it is certainly no triumph to leave behind a mesentery containing involved lymph nodes. The principle of sacrifice of vital organs in order to cure is not new to the cancer surgeon and it is difficult to rationalize the application of a different principle to the rectum.[2]

There is at present an interesting trend in the management of lesions situated elsewhere in the colon (exclusive of the sigmoid colon and rectum). The first attempts at resection of malignant colon lesions were performed with primary anastomosis, and with forbidding mortality rates (as high as 60 per cent). The exteriorization procedure, first performed by Heinecke, Bloch and Paul (1890-1895) was later popularized by Mikulicz (1903) and was attended by a much lower postoperative mortality.[10] Rankin[19] and Lahey[20] have further modified and

popularized the procedure and the majority of surgeons were using the method, particularly for left colon lesions, as late as 1940. In the last few years, however, there has been a distinct trend toward the original technic of the single stage operation, with primary anastomosis.

The chief argument for employment of the exteriorization procedure in the past has been the reduced risk of peritonitis but, at the present time, more and more authors are presenting statistics which would make it appear that primary anastomosis in competent hands is attended with no higher mortality than the other method[1, 6, 10, 11, 21, 22, 23, 24, 25, 26, 27] (table 3). If primary anastomosis is as safe as the exteriorization procedure (obstructive resection of Rankin) there is much to recommend it. Objections to the exteriorization operation include (1) the annoyance of a temporary fecal fistula, (2) high incidence of such undesirable sequelae as wound infection, wound disruption, persistent fecal fistula, incisional hernia and intestinal obstruction, (3) necessity for multiple operations and increased hospitalization, (4) possible inadequate removal of mesentery due to necessity of preserving the blood supply to the exteriorized bowel. Coller[1] has found the average length of hospital stay following the exteriorization operation to be fifty-six days compared to seventeen days for anastomosis. Primary anastomosis in the open type has been favored at this hospital during the last year and it has been gratifying to find that obstructive resection was necessary on only one occasion. This has paralleled the experience of others who favor primary anastomosis, Coller[1] recently reporting that obstructive resection was performed in only 6.2 per cent of 299 colon resections. The question of open anastomosis as opposed to the so-called aseptic or closed anastomosis is a point of technic about which surgeons differ widely at the present time. Allen,[6] Cole[8] and Whipple[26] are proponents of the open anastomosis, while Hinton and Localio,[10] MacFee[11] and others favor the aseptic type. It would seem that the advantage of precise and accurate placement of sutures afforded by the technic of open anastomosis would far outweigh any danger from peritonitis, particularly since the peritoneum is known for its ability to withstand a single episode of contamination. The use of oral streptomycin, sulfathalidine or succinyl-sulfathiazole are useful adjuncts in preparation for primary anastomosis.

The experienced surgeon is well aware of the axiom of large bowel surgery that resection in the face of obstruction is contraindicated.[29] This applies to exteriorization (or obstructive) resections as well as to the technic of resection and primary anastomosis. Relief of obstruction is mandatory prior to resection and frequently this can be accomplished satisfactorily by such conservative measures as mineral oil by mouth, repeated enemata and Miller-Abbott or Wangensteen intubation. If these measures fail, preliminary surgical decompression of the bowel proximal to the tumor should be performed, using such operative procedures as cecostomy or transverse colostomy. After the obstruction has been completely relieved, resection and primary anastomosis usually can be accomplished with safety.

PALLIATIVE RESECTION

Until quite recently, the patient with large bowel malignancy and distant metastases was doomed to either surgical abstention, exploratory laparotomy alone or simple colostomy. Lahey[30] has emphasized the extremely poor palliation usually achieved by colostomy. He points out that the retained primary tumor with attendant bleeding and infection is the cause of a great deal of misery due to pain and passage of blood and pus. Recently it has been found that much more satisfactory palliation can be obtained in the incurable case of carcinoma of the large bowel by resection of the primary tumor. In contrast with the average length of life following either no treatment or simple colostomy for cancer of the rectum, there seems to be a definite prolongation of life following palliative resection in those patients with irremovable distant metastases. Deland[32] has shown the average length of life in the untreated patient with cancer of the rectum is 17 months. Colostomy does not seem to prolong life in these cases. Lahey[31] has found an average life expectancy of 25 months following palliative resection in patients with liver metastases as against an average length of life of 14 months in such patients without palliative resection. As might be expected, the immediate operative mortality for such resections is higher than that following resections for cure. Yet, Coller[1] has reported a mortality of 4.7 per cent in ninety palliative resections, and seven such resections have been done at this hospital within the last year with no mortality. With resectability rates for cancer of the colon and rectum approximating 90 per cent, 10 to 20 per cent of the resections (as determined at operation) will be done for palliation alone. Metastasis to the liver is the usual distant spread necessitating palliative resection, although spread to the distant peritoneum may preclude hope of cure. There is some question concerning the advisability of palliative resection in the face of metastasis to the lungs. This complication is followed frequently by a rapid downhill course and palliative resection may not be as beneficial as in the case of liver metastasis. The incidence of pulmonary metastasis is difficult to determine, but is probably much higher than is generally suspected. It should be pointed out however, that the diagnosis of pulmonary metastasis is made from the roentgen film of the chest and, while usually reliable, is subject to occasional error. Where doubt exists as to the presence of pulmonary involvement, radical resection of the primary tumor of the large bowel is, of course, indicated. One patient with strong roentgen evidence of pulmonary metastasis has been subjected to abdominoperineal resection of the rectum

at this hospital during the last year. To date, (eleven months following operation) although there is roentgen evidence that the single lung metastasis is increasing in size the patient is otherwise quite well, maintaining a normal weight and sense of well being.

Psychologically, the patient subjected to a palliative resection is much improved since there is the realization that "the tumor has been removed." Two patients with cancer of the rectum and with pathologically proven massive liver metastases recently have been examined following abdominoperineal resection of the rectum performed at this hospital and although the time interval (four months) has been short, the palliation achieved seems worthwhile. Both patients have gained weight, are mentally improved and have returned to light household duties. In one of these patients coincident resection of the uterus, cervix, fallopian tubes and ovaries was necessary.

SUMMARY

Progress has been made in the treatment of cancer of the colon and rectum during the last decade. There is, however, room for improvement, and further increase in the salvage from this disease probably will be the result of earlier recognition. At the present time over 30 per cent of the cases are beyond hope of cure when first seen. In this regard, it is important to realize that more than 60 per cent of all cancer of the large bowel can be detected by digital rectal examination, a procedure that should be a part of every routine physical examination.

Although there is no clinical picture that is typical of early carcinoma of the colon or rectum, more than 95 per cent of the patients will give a history of rectal bleeding, change of bowel habits or abdominal distress.

With the present day low risk of operation, practically all patients should be offered resection for cure or palliation. In incurable lesions, resection of the primary tumor seems to afford much more satisfactory palliation than can be achieved by colostomy alone.

The present revival of sphincter saving procedures in the treatment of cancer of the rectum does not seem logical *as far as the cure of cancer is concerned.* Until five-year survival statistics in large numbers of cases demonstrate an equally high cure rate, such operations should be abandoned in favor of the more radical abdominoperineal resection.

In the treatment of cancer of the colon (other than rectum, rectosigmoid and sigmoid colon) there is a definite trend toward single stage procedures with reestablishment of bowel continuity by means of primary anastomosis. With proper selection of cases and with present day methods of preparation for operation, primary anastomosis can be accomplished safely in a high percentage of cases following resection of both right and left colon lesions.

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TUMOR SEMINAR

Conducted by SHIELDS WARREN, M.D., *Boston, Massachusetts*

EMBRYONAL ADENOMA OF THE THYROID WITH BLOOD VESSEL INVASION

History (presented by J. Owen Blache, M.D., Homer Phillips Hospital, St. Louis).—For ten years previous to admission this 39 year old woman had noticed a nonpainful mass in her neck which had increased in size during the year prior to admission. There were no subjective symptoms. The basal metabolic rate was +8. Physical examination was noncontributory. The mass was surgically removed for cosmetic reasons.

The specimen weighed 30 gms., measured 5 by 4 by 2 cm., and consisted of part of the thyroid gland, two thirds of which was apparently normal thyroid. The remaining one third was composed of an apparently well-circumscribed, encapsulated, grayish white, fairly firm mass. There was a break in the capsule of the mass and, on pressure, material similar to that of the tumor mass could be expressed.

SHIELDS WARREN, M.D.: The history is clearly presented and the gross shows a well delineated homogeneous grayish white tumor which is encapsulated and within the thyroid gland (fig. 1). With these adenomas, the appearance of areas of necrosis and degeneration is frequent. I would like to say that one of the many reasons that these are removed is that the patient comes in because of sudden increase in the size of the tumor and pain. In those instances, one finds considerable hemorrhage into the gland which is the cause of the pain. As this was thought by some to be a parathyroid adenoma, it should be pointed out that any tumor in the substance of the thyroid is practically never a parathyroid neoplasm. The cells of this embryonal adenoma are quite uniform, and one will note that there is a little hint of acinar arrangement occasionally, although true acini do not exist (fig. 2). The cords of the cells are well brought out in the arrangement of these nuclei and there is a hint that potential acini may appear later on. The cells are clear; there is no granulation or vacuolization in them.

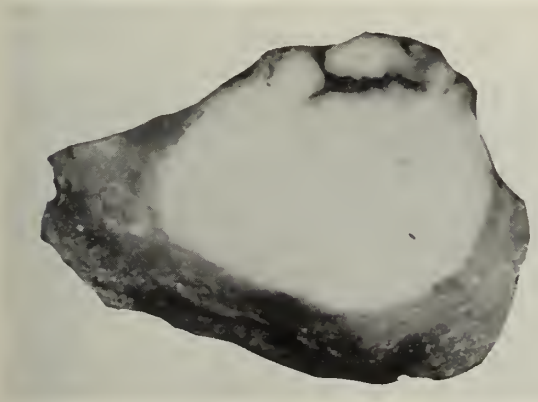


Fig. 1. Well delineated adenoma of the thyroid.

Now, in the parathyroid adenomas, one usually finds three types of cells: there may be oxyphil cells, there are practically always vacuolated cells sometimes going to the water-clear type of hyperplasia of the parathyroid, and also nonvacuolated solid cells. In the adenoma of the parathyroid, therefore, one would expect to find either some oxyphil cells which are not present here, or some vacuolated cells which I did not find here. The parathyroid adenoma without function is extraordinarily rare, just the reverse of the picture in the thyroid. Adenomas of the thyroid are rarely associated with hyperfunction. In the parathyroid they almost always are associated with hyperfunction. Here there is a carefully presented history which makes no mention of renal stone, repeated fractures, pain in the bones or anything that would suggest the characteristic syndrome associated with a functioning parathyroid tumor. So the weight of evidence, I believe in spite of the majority vote here, is against a parathyroid adenoma and

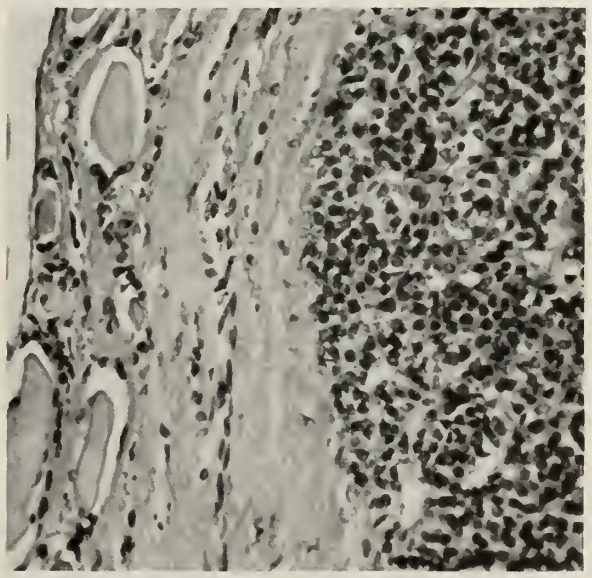


Fig. 2. Photomicrograph. Note sharp border between cellular tumor and fibrous capsule of adjacent collapsed thyroid. (Moderate enlargement.)

Assistant Professor in Pathology, Harvard University; Director, Division of Biology and Medicine, Atomic Energy Commission, Washington, D. C.

The Seminar was under the auspices of the St. Louis Pathological Society and held at the Ellis Fischel State Cancer Hospital, Columbia, November 22.

in favor of a thyroid adenoma. Assuming that it is a thyroid adenoma, one has to consider what type. There is practically no colloid formation anywhere in the tumor. I did not find any mitotic figures, which is in favor of an adenoma. The capsule seemed to me to be relatively intact. There are one or two places where it is thinned a bit, but not actual evidence of invasion. There are a number of large thin-walled blood vessels present, none of which show invasion, and I am extremely loathe to make the diagnosis without finding blood vessel invasion. I think that clue which Allen Graham emphasized is the most valuable single thing that one can have, and I am always worried about diagnosing a thyroid tumor as a malignant tumor unless I can find evidence of blood vessel invasion. The thyroid tumor always looks worse than it is. In fact, a hyperplastic thyroid looks much worse than it is, and a good many people have made the mistake of calling a hyperplastic thyroid a malignancy; but that is one of the places where many have laid themselves open to the attacks of individuals like Astwood who, thoroughly competent in their own field, have considered themselves competent to judge problems entirely outside their field. I think Astwood is doing little service to the clinicians of the country when he is as outspoken as he is about the relatively rare existence of malignancies of the thyroid because, if these cases of malignancy of the thyroid are not recognized and treated, one is going to lose a number of patients who otherwise could be saved. In this case there is not a question of malignancy. I believe that I would classify this tumor as an embryonal adenoma of thyroid origin.

Dr. Ackerman: In this case, I think I misinformed you because multiple sections of the thyroid through the capsule revealed evidence of blood vessel invasion, although I believe there was no evidence of this invasion in the sections which were made for the Seminar. In view of this finding, would you mind commenting on the importance of blood vessel invasion regarding the future outlook of this patient.

Dr. Warren: In that case, the prognosis of an embryonal adenoma with blood vessel invasion is uncertain. This is a benign neoplasm which has become potentially malignant. I recall a tumor of the thyroid designated as potentially malignant, but twelve years after removal the patient had skeletal metastases. This proved that it actually was a malignant tumor originally. As far as one can tell from a ten year follow-up, 10 per cent of these tumors with blood vessel invasion metastasize. A considerable number of that group had had irradiation postoperatively. I think the chances are great that there is no tumor remaining in the neck of this patient, and I would say that irradiation is not indicated. If the capsule is not intact, and if there is a suggestion of penetration outside or adherence of the tumor to underlying structures, or thickened irregularity of the tissues in the region of the tumor, then I would say that the patient should receive postoperative irradiation.

Dr. Platt, Louisville, Ky.: I would like to ask Dr. Warren about the criteria of blood vessel invasion.

Dr. Warren: I am glad that you brought up that point. I feel that the tumor cells should be attached to the vessel wall by definite fibrin strands or be closely adherent to the intima. The mere finding of scattered cells or even clusters of cells is not sound evidence of blood vessel invasion. Not infrequently veins will be distended to the size of the little finger for a distance of 2 or 3 cm. away from the tumor. The parable of the soil applies definitely to the establishment of metastases. A good many of the tumor cells that are scattered around the body fall upon stony ground or are picked up by the vultures of the air, so to speak; that is, fibrin clot will form around them, there will be inadequate local aeration and the cells will die.

Dr. Jenkins, Omaha, Neb.: The only clear picture that I have is one that came from some rather old statistics which I am not sure are up to date; that was 0.3 per cent. That is a pretty low incidence and I am not at all sure whether that is right. I feel that every single nodule of the thyroid should be removed, first, second and third, because even an adenoma does not do anyone any particular good, and the operative risk is so slight that I think it is well warranted to remove any of these single nodules. It is stated that 95 per cent of thyroid cancers come from preexisting adenomas. How in the world that figure was arrived at I have never been able to find, and all I can say is that the majority of thyroid cancers which I have seen give a history of a preexisting nodule for a number of years.

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GIANT CELL CARCINOMA OF THE THYROID

History (presented by Shields Warren, M.D., New England Deaconess Hospital, Boston).—This 52 year old woman was admitted to the hospital on January 19, 1935, with a diagnosis of a malignant tumor of the thyroid. There had been rapid growth of the mass for two weeks previous to hospitalization, and physical examination at the time of admission revealed a greatly enlarged, stony hard thyroid. These changes were most prominent in the right lobe. The patient could speak only in a hoarse whisper, there was considerable stridor and she complained of difficulty in breathing. Roentgenogram on January 17, 1945, showed a 7 cm. mass in the region of the thyroid which occupied the anterior mediastinum, extended substernally and displaced the trachea and esophagus posteriorly and to the left. There was a marked degree of compression of the trachea, the narrowest point being at the level of the second thoracic vertebra. There was some calcification of the tumor. The findings were those of substernal thyroid with marked compression of the trachea. On January 21, at 9:15 p. m. she became unable to breathe and her color was poor. She was prepared immediately for operation and an emergency tracheotomy was performed. However, she expired at 10:19 p. m. the same evening.

The tumor weighed 300 gms. and was composed of yellowish gray tissue subdivided into lobules by fibrous trabeculae. In some zones it was homogeneous, smooth and shiny, and, in others, rather opaque yellowish white as though necrosis had occurred. A small amount of calcification was also present in the central portion, and only a remnant of normal thyroid tissue remained on the right. On the left, about half of the lobe was still present superiorly. No definite encapsulation was seen although externally the tumor mass was rather well circumscribed. No circumscription was noted in areas in which the mass infiltrated the thyroid tissue.

DR. WARREN: All are agreed that this is a malignant tumor. The margin of the neoplasm brings out the thyroid origin and the fact that one is dealing not with an encapsulated lesion, as in the preceding case, but with a lesion which is infiltrative and invasive. The tumor is extremely pleomorphic with great divergence from the normal in some cells, with vacuolated nuclei and the presence of spindle cells (fig. 3). In the higher power, one sees again the spindle shape of a number of cells, and often there are multinuclear irregularly lobulated nuclei (fig. 4). I do not believe that this could be a malignant endothelial neoplasm. There was some evidence of calcification of this tumor which might imply that the tumor had been growing for some time. This type of neoplasm was considered for a long time as a sarcoma. However, the tumor cells do not form collagen, and true fibrosarcomas are extremely rare in the thyroid. I would call this neoplasm a giant cell carcinoma of the thyroid.

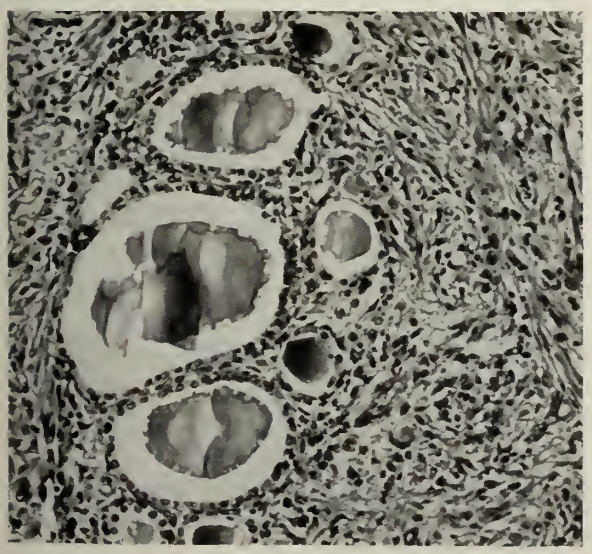


Fig. 3. Photomicrograph. Spindle shaped tumor cells are infiltrating thyroid follicles. (Moderate enlargement.)

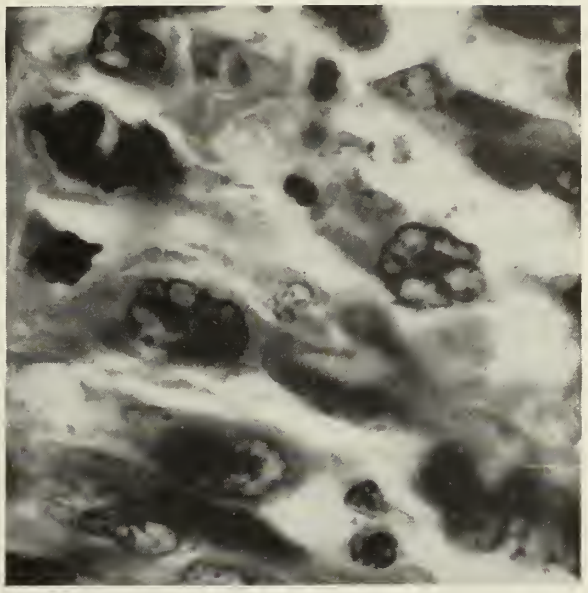


Fig. 4. Photomicrograph. Note large cells with lobulated nuclei. (High power enlargement.)

DR. RABSON, Ft. Wayne, Ind.: What emphasis, Dr. Warren, do you place on the presence or absence of large nucleoli in the identification of epithelial tumors?

DR. WARREN: I do not believe that prominent nucleoli will help in determining whether a tumor is of epithelial origin or not. Some of the most prominent nucleoli are in Reed-Sternberg cells. By and large, though, there is a decided tendency for the nucleoli to be unduly noticeable in malignant cells. The Papanicolaou technic tends to emphasize the importance of the enlarged nucleoli as evidence of malignancy. In general, in reviewing these slides, there are no strikingly enlarged nucleoli. The absence of such nucleoli I would not regard as ruling out an epithelial origin.

DR. STOWELL, St. Louis, Mo.: I would like to ask Dr. Warren whether he thinks the size may be re-

lated to the rapidity of growth in a benign or malignant tumor; because three or four nucleoli can be made to appear within twenty-four hours in the same cell by merely markedly altering the conditions of its rapidity of growth and regeneration.

Dr. Warren: That is an interesting observation. One of the points that the older of you will remember was frequently made when Dr. McCarthy was trying to emphasize the nucleoli. He pointed out that the hepatic cell which was called upon to regenerate often showed prominent nucleoli.

Dr. Wheelock, Chicago, Ill.: Would value be placed on connective tissue stains in the differential diagnosis of a sarcoma of the thyroid, from a giant cell carcinoma?

Dr. Warren: I place a great deal of emphasis on the reticulin stains. If one finds that between each tumor cell there is a reticulin net or there are collagen fibers, or if each cell has fibroglia fibrils, then I believe that the evidence is fairly strong that one is dealing with a true fibrosarcoma of the thyroid gland. There have been only two or three of these tumors against eighty or one hundred of the giant cell carcinomas from the Lahey Clinic series.

Dr. Ackerman: What has been the prognosis of the giant cell carcinoma?

Dr. Warren: The prognosis has been extremely poor. These tumors are completely resistant to irradiation and they do not do well with surgery. Only an occasional case survives and, while radical surgery should be attempted, not a great deal can be expected from it.

PAGET'S DISEASE OF THE SKULL WITH OSTEOGENIC SARCOMA

History (presented by Drew F. Agar, M.D., St. Louis City Hospital, St. Louis).—This 60 year old woman was admitted to the hospital on January 2, 1947, complaining of incoherent speech, pain in the head, blindness, inability to walk without support, inability to hear and dizziness. The onset of her illness was in July of 1946 when she began having nervous spells with episodes of pain in the head and the ability to see only half an object. Loss of vision of the right eye occurred at that time. In July of 1946 she was admitted to another hospital where a diagnosis of Paget's disease of bone was made. For two months previous to admission to this hospital she had had dizzy spells, had been unable to walk, could not eat properly because of inability to move the tongue, and loss of hearing began. There was also a history of marked enlargement of the head, especially in the frontal and temporal regions, beginning one year previous to admission. On physical examination there was enlargement of the forehead, with prominence of the frontal and temporal regions, opacity of the lens of the right eye and papilledema of the left eye. The blood Kahn was negative. Roentgenograms of the skull were interpreted as Paget's disease of bone. While in the hospital the patient was stuporous, respiration became labored, and rales developed in the bases of both lungs. The temperature rose to 104 F. on January 12, 1947, and the patient expired on January 13, 1947, with a clinical diagnosis of Paget's disease of bone.

At autopsy there was a mass of soft pinkish gray material extending from the region of the right posterior clinoid process posteriorly to the region of the cerebellopontine angle, at which place it was attached to the brain stem. A nodule was loosely attached to this mass but remained with the brain when the latter was removed. It did not infiltrate the brain and was lifted easily from the meninges. The slides were made from this nodule.

Dr. Warren: The majority opinion is for osteogenic sarcoma either alone or in association with Paget's disease. When one has an osteogenic sarcoma in an individual whole epiphyses have closed, he thinks automatically of two things: first, Paget's disease and, second, poisoning with radium or its related elements (Martland). I think that one has to remember that any local irritant which has been deposited in bone and remains there for a long time may stimulate the development of osteogenic sarcoma. In this particular tumor, Paget's disease provides an etiologic agent. This brings up a neat diagnostic point. Osteogenic sarcoma is one of several tumors in which study of the blood for its enzyme content may be helpful in diagnosis. If one has an elevated alkaline phosphatase, osteogenic sarcoma is one of the neoplasms to consider. However, in Paget's disease, in the active stage, a prominently elevated alkaline phosphatase also can occur. This therefore introduces a little complexity in the differential diagnosis. There are certain statistics which are of interest. In the first place, one should ask how frequently does Paget's disease undergo sarcomatous degeneration. These figures range from as low as 5 per cent to 14 per cent,

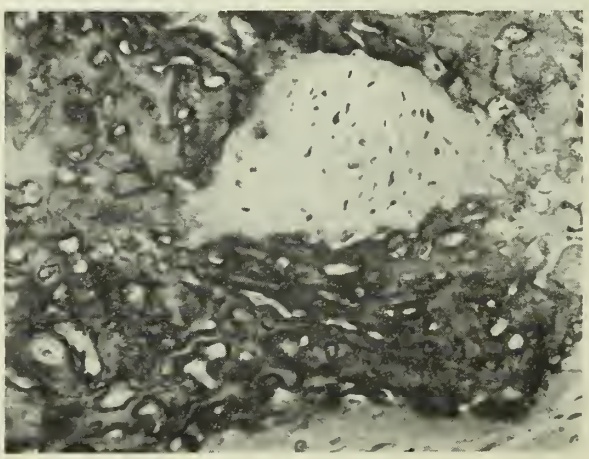


Fig. 5. Photomicrograph. Typical Paget's disease with mosaic pattern. (Moderate enlargement.)

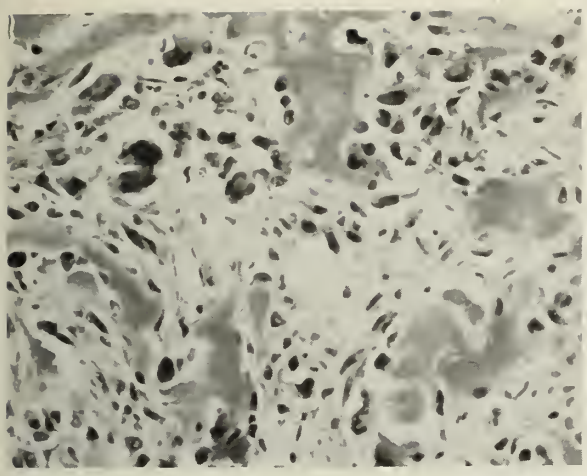


Fig. 6. Photomicrograph. Superimposed osteogenic sarcoma with neoplastic osteoid and sarcomatous stroma. (Moderate enlargement.)

and in one recent series the figure was 28 per cent. There are, of course, obvious reasons for this. In the first place, there is much more rapid formation of bone, greater osteoblastic activity; and in Paget's disease, the tissues may become actively growing after they have been quiescent, and this may be accompanied by an osteogenic sarcoma. The average age of sarcomas in Paget's disease is 66 years. The average age for osteogenic sarcomas as a whole is only 12 years, a very startling difference. Males are affected much more commonly than females, and in one series, there were eighty-four males and twelve females. The bones most frequently involved in the order of frequency are: femur, humerus and skull. The variety of tumor may differ; some of them are osteogenic, others arise from the periosteum and some are fibrosarcomas. The sections show both Paget's disease (fig. 5) and actively growing osteogenic sarcoma with neoplastic osteoid (fig. 6). This case, therefore, represents a classical example of Paget's disease of the skull combined with osteogenic sarcoma.

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ADAMANTINOMA OF THE TIBIA

History (presented by Bela Halpert, M.D., The University of Oklahoma Hospitals, Oklahoma City).—The patient, a 24 year old white woman, was admitted to the hospital on November 14, 1945, complaining of swelling of the mid and lower portions of the right leg. In August of 1943 she had fallen and struck her leg against a step. The painful area increased in size and in April 1944 she slipped on a marble floor and fractured her leg. After the cast was removed painful swelling of the leg followed. In October 1945 roentgenograms revealed a bone tumor and amputation was advised. Roentgenograms of the chest were negative. Before amputation, local examination showed a fusiform enlargement of the midportion of the right leg which extended to within 3 cm. of the ankle joint. The mass was firm and the overlying skin was tense, shiny and nonadherent. Roentgenograms showed an osteolytic mass which destroyed about 12 cm. of the distal shaft of the tibia. There was expansion of the bone cortex and only a thin shell remained. There was no bone proliferation. A midthigh amputation was done on November 17, 1945.

On section of the tibia, grayish white neoplastic tissue filled the marrow cavity and replaced the compact layer, extending through it into the soft tissues.

DR. WARREN: This case is one in which a variety of diagnoses have to be considered. Ewing's tumor is one of these. It used to be said that if one wanted to be sure a tumor was a Ewing's tumor, send the slides to Dr. Ewing and have him say it was something else. I do not know of any neoplasm over which there has been more controversy. It is a tumor concerning which little is known as to histogenesis even at the present time. The weight of evidence appears to favor origin from the primitive reticular cells of the bone marrow, but there is no agreement on this. In consideration of the diagnosis of Ewing's tumor, I have sometimes put as much weight on the history and roentgenologic findings as I have on the histology. I feel that in any tumor of bone, if the pathologist tries to make a diagnosis on the slides alone, he is taking considerable risk; and the radiologist in a similar fashion, is taking the same risk if he tries to make the diagnosis on the roentgen rays alone. In bone tumors, above any other group, careful consideration of the history, roentgen ray evidence and the pathology have to be evaluated carefully together. The gross specimen reveals a huge tumor which is expanding the bone with little adjacent bone being laid down. It has a somewhat soap-bubble appearance, is rather well circumscribed, somewhat homogenous in texture and it does not have the jelly-like character one sees in the usual Ewing's tumor. The microscopic appearance demonstrates a clear cut stroma, and individual cells have a tendency to spider-web appearance. There are also lining cells which have a suggestion of an epithelial structure (fig. 7). There is a sharp demarcation between stroma and tumor. Now, I have never seen a roentgenogram of a Ewing's tumor with a soap-bubble appearance, which is the first finding against the diagnosis of Ewing's tumor. Second, while one finds some stroma in a Ewing's tumor, it is relatively meager in amount. And finally, this neoplasm is quite well preserved throughout, and a Ewing's tumor almost always has patches of necrosis and hemorrhage scattered through it. The necrosis and hemorrhage is



Fig. 7. Photomicrograph. Epithelial-like strands of tumor supported by a delicate connective tissue framework. (Moderate enlargement.)

one of the most characteristic features of this tumor. Time after time, when I have been doing a frozen section on a Ewing's tumor, I have had to ask the surgeon to go back and re-biopsy in order to obtain a specimen in which the cells were well visualized. In this history, there is no mention of pain. The patient complained only of swelling. Pain is usually an outstanding symptom of a Ewing's tumor, and frequently the pain will be apparent long before the swelling appears. Again, one has a long history with an extensive tumor and no evidence of metastases. In a Ewing's tumor, by the time it has reached a fair size, or lasted several months, it has metastasized. All these factors are against the diagnosis of Ewing's tumor, and I would make a diagnosis of adamantinoma of the tibia. Why is this tumor occurring in this region? There is no good explanation of this.

There is also the possibility of another diagnosis for there are cells which are elongate, carrot-like in shape, and could suggest a metastatic neuroblastoma. There were no masses in the abdomen and, again, a firm white fairly solid mass is not characteristic of a large neuroblastoma. Degeneration and hemorrhage are common in neuroblastoma. The cells of the spider-web type are not seen in any type of neuroblastoma.

In regard to the adamantinoma, this is a tumor of twenty years' duration which would of course rule out Ewing's tumor and metastatic neuroblastoma. It grew slowly, finally penetrating the cortex to involve the soft tissues. It was first apparent at the age of 17, and finally removed at 37. There are about thirty-odd of this type of tumor recorded. There are several points of origin from which these tumors might arise. One possibility is from epithelial cells which are buried near bone which might further differentiate to enamel organs. Another possibility cited as a point of origin is that a basal-cell-like proliferation occurs following trauma. However, no satisfactory explanation is as yet at hand. Similar tumors of the cranio-pharyngeal type and one case arising probably from a teratoma of the ovary have been reported.

Dr. Neal, Columbia, Mo.: Would a reticulin stain be helpful?

Dr. Warren: I think a reticulin stain would be useful, but I am not sure that the distribution of reticulin would in any way appreciably alter my diagnosis. I am not convinced that any endothelial tumor can differentiate in two distinct ways: one, toward this epithelial sort of structure and, the other, to the spider-web like cell. If there was only a little better differentiation, and a little enamel being formed by some of these cells, it would be ideal. But practically all of the adamantinomas of the tibia stay in the poorly differentiated group and the formation of enamel does not occur.

Dr. Severance, San Antonio, Texas: Dr. Warren, in looking at this tumor, I tried to find the tall columnar cells with the nucleus away from the basement membrane which you so frequently see along the edge of the various cell nests in the adamantinomas of the oral cavity. I did not find any, and I would like to ask if this negative finding is characteristic of adamantinoma of the tibia?

Dr. Warren: I have seen so few of these tumors in the tibia that I cannot say what is really characteristic and what is not. But in the ones which I have seen, the high columnar cells have not been present.

Dr. Ackerman: Have you seen any metastases from adamantinoma of the tibia?

Dr. Warren: In the few which I have seen, there have been no metastases. In the literature, in spite of the long duration of these tumors, the majority of cases have not metastasized. Some of the ones that have been reported with metastases impress me as probably belonging to the group of metastatic neuroblastomas or to Ewing's tumor.

Dr. Eckert, St. Louis: If you compare this lesion with one of the usual type occurring in the mandible and consider it a malignant tumor, there is no tendency at all toward the epidermoid growth which one usually observes when the ameloblastoma becomes malignant. One naturally wonders whether this is a malignant tumor.

Dr. Warren: A number of the adamantinomas do undergo epidermoid metaplasia when they occur in the jaw, and also when they occur as part of a cranial pharyngioma. And, as Dr. Eckert has pointed out, when these tumors metastasize as they do sometimes from the jaw, they do not metastasize as an adamantinoma, but as an epidermoid carcinoma. There are a considerable number of cranial

pharyngeal neoplasms or adamantinomas of the jaw which have a long history without epidermal metaplasia taking place. I remember an instance in a medical student who had a tumor for nine years with two or three recurrences while in medical school and has had a recurrence or two since graduation. During that entire period of time, no epidermal metaplasia had taken place.

DR. STOWELL, St. Louis: Although it may be the exception which proves Dr. Warren's rule about the metastases of these tumors, Schweitzer did report one case in 1943 which metastasized as adamantinoma.

DR. WARREN: I am very glad to know that, for there is a special interest in the metastases of highly differentiated tumors.

DR. ECKERT: How frequently is there true enamel formation in ameloblastoma of the tibia?

DR. WARREN: It is unknown as far as I am aware.

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SYNOVIAL SARCOMA OF THE SOFT TISSUE OF THE LEG

History (presented by L. S. N. Walsh, M.D., St. Luke's Hospital, St. Louis).—The patient, a white woman aged 31, entered the hospital April 9, 1947, with a chief complaint of a painful, slightly swollen mass on the lateral side of the sole of the left foot. This had been present for three years. On examination, a firm, tender 5 by 3 cm. fixed mass was present beneath the intact skin overlying the distal portion of the fifth metatarsal. The skin overlying this mass was intact and roentgenograms of the foot showed no evidence of bone destruction. The tumor was surgically excised on April 22, 1947; it was grayish pink in color, a portion of it was lying between the fourth and fifth metatarsals and minute cystic areas were present within it.

DR. WARREN: The great majority seem to feel that this is a tumor of the synovial group. A section of the tumor reveals a number of interesting cells, some of which are vacuolated lightly with occasional mitoses, and then there are sharply-defined spaces with a mucinous material within them. Certain areas simulate the appearance of an epithelial structure (fig. 8). Some of the cells obviously have secreted a material which is mucoid in character. Many of these tumors occur in the regions of the knee and ankle. These tumors began to be recognized in 1930 when there were two cases in the literature. The life history of these tumors has been quite variable, some lasting for only a few months and others for a number of years. The longest one that I have had personal experience with has gone some seven years. These tumors, although they appear in the region of joints, do not involve the joint cavities and they do not appear in cases of arthritis with proliferative synovitis where one might think there would be more reason for their occurrence within the joint. In the patients at the Robert Brigham Hospital, Boston, which is primarily for arthritis patients, there has been a wide range of lesions of various types within synovial membranes, many of them associated with active and prolonged proliferations. There has not been a single synovioma in the group. When one sees this type of tumor it usually comes out of a clear sky. The patient may present a history of trauma, but it is difficult to determine whether or not the trauma simply is calling attention to a lesion already in existence. It might be well at this moment to review what criteria should be considered in relating a tumor to trauma. Such a relationship is extraordinarily rare. First, the part has to be proven to be intact prior to the time of trauma and, secondly, the trauma has to be adequate. Some years ago I participated in a court case in Boston in which the relation between trauma and tumor appeared clear. There was an unquestioned sarcoma; there was an unquestioned trauma to the ankle and the ankle was known to be normal prior to the trauma. The only difficulty was (which came out in the course of the trial) the sarcoma was on the right ankle and the trauma had occurred to the left ankle! The tumor must also be of a type which reasonably can be assumed to arise there, i. e., it should not be a metastatic neoplasm and, finally, the tumor must occur within a reasonable period of time following the trauma. So often one hears stories of a tumor arising only a day or two after trauma. One also has to consider time relationships from the aspect of the type and growth-rate of a specific neoplasm. I would be skeptical of even a

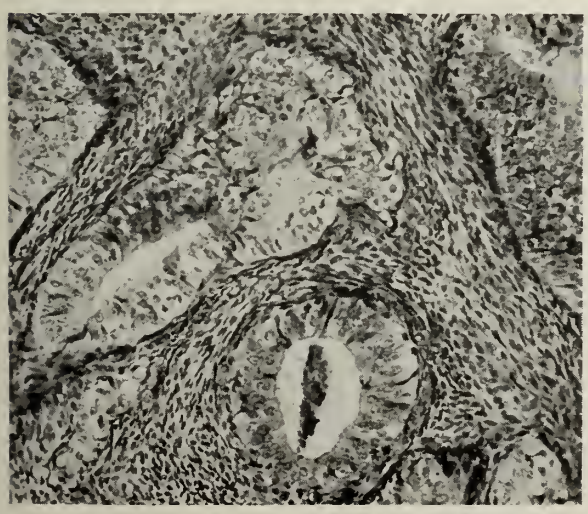


Fig. 8. Photomicrograph. Synovial sarcoma with sarcomatous stroma and glandular components.

rapidly growing sarcoma being able to turn up in less than three weeks after trauma. It also has to come in a reasonable length of time afterward, and I feel that if it is more than three years afterward, coincidence begins to come into the picture. It is rare that a single trauma is a cause of tumor. Most of the cases that have been established by legal precedent are the ones in which the evidence is much more satisfying to the legal mind than to the pathologists.

Dr. Ackerman: It is well known that this is an extremely malignant tumor in its evolution and frequently occurs in young individuals, particularly in the region of the knee and ankle joints. Naturally the question of therapy often arises and I would like to ask several questions: (1) would there be any contraindication to incisional biopsy; (2) if it proved to be a synovial sarcoma, should one proceed immediately with amputation and, if so, where, and (3) because of the fact that Haagensen and Stout have reported such high frequency of lymph node metastases, what consideration should there be of radical groin dissection?

Dr. Warren: I know of no instance in which incisional biopsy followed fairly promptly by treatment (within a week's time) has done any harm. Pathologists in Massachusetts have been concerned with that problem for there is a State Tumor Diagnostic Service for which material is removed from the patient and then there may be a lapse of several days intervening before the tissue can be examined and a report made to the surgeon. In checking back a number of those cases, I could not find that the percentage salvage varied in any way from a controlled series. I think it is much more important to know what one is dealing with than to undertake radical therapy without benefit of biopsy, and I am strongly in favor of incisional biopsies. I don't like aspiration biopsies. Aspiration biopsies are better than no biopsy at all, but I think that one should remember that the place where the most enthusiasm has been built up for them (The Memorial Hospital) operated until recently essentially as a huge outpatient clinic with few beds. The time when they were strongest for this method was a time when it was not a question of "is this the best way of getting a biopsy" but the question of "shall we get a biopsy or shall we not?" Secondly, the aspiration biopsy can rarely make the diagnosis alone; it has to be considered along with the clinical data. Finally, I do not think there is any evidence that to a few tumor cells, an 18-guage needle looks any different than the edge of a scalpel and I think there is just as much chance of spreading a tumor by aspiration biopsy as by incisional biopsy. There are certain inaccessible lesions where an appreciable operative procedure is called for that would not warrant the incisional approach and where aspiration should be used, but by and large, incisional biopsy is far the wiser choice.

The therapy of these tumors should be radical for their prognosis is gloomy. I believe that radical surgery should be done and that this should include the radical removal of regional lymph nodes. Involvement of lymph nodes can occur in other types of sarcomas such as osteogenic sarcomas; about 8 per cent of my osteogenic sarcomas, for instance, have had lymph node metastases.

Dr. Ackerman: I have to defend my position on aspiration biopsy. In the first place, I agree with Dr. Warren that in many sarcomas incisional biopsies are necessary for a clear-cut diagnosis. It should be clarified that one is not smearing the material obtained by aspiration, staining it and then trying to identify single cells. At this hospital, we are making paraffin sections which do not differ in any way from the usual section of a biopsy except in size, for architectural pattern is maintained. We find its greatest use in the evaluation of regional lymph nodes in which the primary diagnosis already has been established. In this group of cases one is usually trying to differentiate between inflammation and tumor. I am against the use of aspiration biopsy in breast lesions as a diagnostic measure.

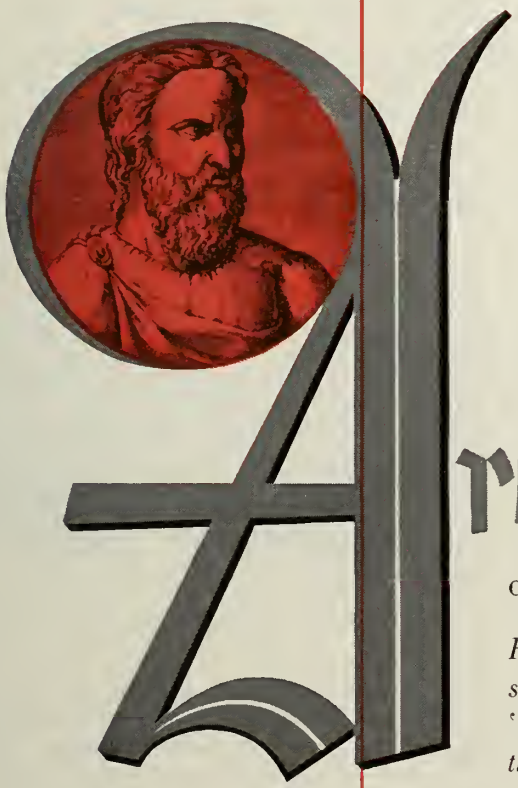
Dr. Warren: I think that Dr. Ackerman and I are in essential agreement. One reason that I am prone to depend on the incisional biopsy, even in lymph node metastases, is that in the Boston area the surgeons outweigh, perhaps unduly, the radiologists and few metastatic lesions of lymph nodes are treated by irradiation. Dr. Ackerman may remember the somewhat caustic comment of one of the Pondville staff members that the chief notoriety of Pondville would be that it was the last place in the world to abandon surgery for metastatic lesions of lymph nodes. In the instances that you outline, I agree that if one has irradiation therapy in mind rather than removal by radical surgery, the obtaining of a core or plug of material—which I would again differentiate, as Dr. Ackerman does, from the traditional type of aspiration biopsy—is a useful procedure.

Dr. del Regato, Columbia, Mo.: As a radiotherapist I am in favor of aspiration biopsy in many instances. For example, in a case of epidermoid carcinoma of the tonsil with a large cervical adenopathy in which the treatment of choice, of course, is radiotherapy, I would not favor incisional biopsy since this might interfere with the proper conduct of radiotherapy. If one treats the patient with an adenopathy and the patient gets well, nobody will believe afterward that the patient had a metastatic adenopathy.

Dr. Geren, St. Louis: You stated, Dr. Warren, that no harm would result if an interval of a week's time elapsed between the biopsy and the therapy. I wondered if your series included many pediatric tumors. It has been pointed out time and again by the Childrens Hospital in Boston that twenty-four hours is sufficient time to do diagnostic procedures before therapy, and I wondered if pediatric tumors could be an exception to that general rule.

Dr. Warren: I have not had enough experience

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with pediatric tumors to answer that. I will ask my colleague, Dr. Farber, when I return to Boston. I would not expect, however, that they would act very much at variance from the tumors in adults, and I think it is much more important to get an accurate diagnosis than to go ahead with fairly drastic surgery on speculation. Now, I do not wish to imply that a week is necessarily the standard time to wait. Many of you, I know, are getting your diagnoses out in twenty-four or forty-eight hours; however, we do have the problem in Massachusetts, as undoubtedly many of you yourselves have, of some areas where there are no pathology laboratories readily available and where the only way for a surgeon to get a pathology report is to remove a sample, send it to some laboratory at a little distance and wait for the report. That was why I mentioned the possibility of a week's holdup in the report.

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DESMOID OF THE ABDOMINAL WALL

History (presented by Lauren V. Ackerman, M.D., Ellis Fischel State Cancer Hospital, Columbia, Mo.).—Four years previous to admission, the patient, an 11 year old boy, had had his appendix removed. Two years later he noted a hard nodule near the site of the previous incision. An osteopath examined him, biopsied this nodule, a report of fibrosarcoma was made, and the patient referred to the State Cancer Hospital. Physical examination showed a well developed young male in good general condition. There was a firm mass in the right lower quadrant which was somewhat movable beneath the skin, painless, and with indefinite margins. There was no evidence of any lymphadenopathy and a roentgenogram of the chest was normal. On June 10, 1947, the abdomen was explored and a well-delineated mass was widely excised, removing tissue down to the iliac vessels.

Grossly, the tumor appeared fairly well encapsulated, measured 8.5 by 6 cm. and on cross section was smooth and grayish in color. This tissue appeared to replace muscle in some areas.

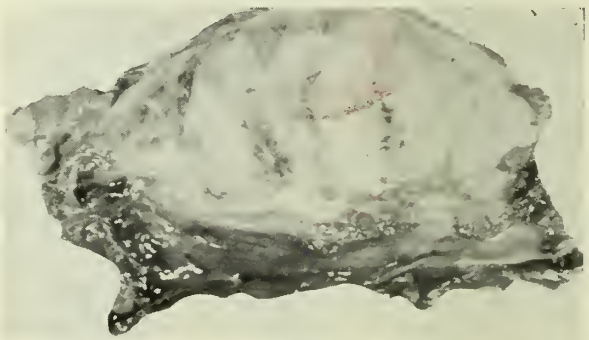


Fig. 9. Gross specimen. Grayish white firm tumor is infiltrating muscle.

Dr. Warren: My diagnosis of this tumor sides with the majority and I believe that it is a desmoid tumor. The keloid question has been brought up and keloids have been a special concern of mine since I have seen many of the atomic bomb survivors in Hiroshima and Nagasaki. There were a tremendous number of exposure and flash burns, and in the scars of extensive flash burns quite a proportion have shown heavy keloid formation as well as all stages of hypertrophic scars. I had thought of a keloid as involving all of the area of a scar. However, the keloids of many of these flash burns involved only scattered portions of the scar and one sees areas of ordinary scar tissue with foci of true keloid here and there in it. The incidence of keloid is no higher in atomic bomb burns than in incendiary bomb burns or in gasoline burns. The gross of this lesion at once rules out keloid, for one sees the mass of solid infiltrating tumor which caused the previously described abdominal mass (fig. 9).

The microscopic appearance reveals a diffuse fibrosis coming in among muscle cells with here and there attempts at regeneration of muscle cells as they are being compressed and deprived of nutrition by the infiltration of the tumor (fig. 10). Where this desmoid ends and where the stroma begins or the interstitial fibrous tissue, I was unable to say. It faded off imperceptibly at the sides. In these neoplasms trauma does seem to be somewhat of a factor. Every case that I have seen gave either a fairly honest history of trauma externally

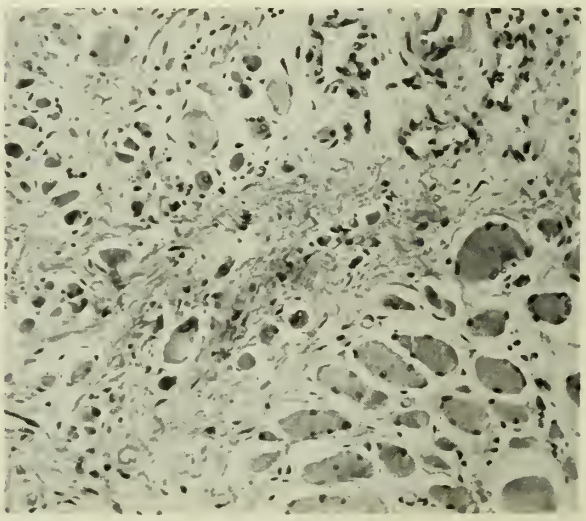


Fig. 10. Photomicrograph. Connective tissue is growing between muscle bundles; some of these muscle cells show degeneration. (Moderate enlargement.)

or of a definite stress involving the abdominal musculature. Two or three have developed following childbirth, others have appeared after heavy lifting, with evidence of either a rupture of the rectus sheath or of the rectus itself.

DR. ACKERMAN: How often do these lesions recur, and have you ever seen one that metastasized?

DR. WARREN: I have not seen one that metastasized. They seem to be a fairly localized tumor but their tendency to recur is fairly high.

? HODGKIN'S DISEASE OF AN AXILLARY LYMPH NODE
? FIBROSARCOMA INVOLVING AN AXILLARY LYMPH NODE

History (presented by Warren Winn, M.D., St. Joseph Hospital, Boonville, Mo.)—The patient, a 57 year old white man, was seen by his physician because of swelling under his arm. Physical examination showed a man in good general health. There was a mass of nodes in the right axilla which were matted together and not attached to the overlying skin. There were no lesions in the breasts and no skin lesions of any significance were noted. A roentgenogram of the chest was normal and the rest of the physical examination as well as all laboratory tests were essentially normal. A lymph node was removed which on section cut with increased resistance and showed focal areas of necrosis and partially replaced substance.

DR. WARREN: This is a case in which considerable disagreement and uncertainty is to be expected. The majority of pathologists here are in favor of fibrosarcoma. I believe that this is a malignant tumor, but I am not thoroughly convinced as to just what type of neoplasm it is. There are large tumor cells with giant nuclei and a suggestion of a Reed-Sternberg type of cell (fig. 11). The node is fibrotic and its capsule is reasonably well respected. Here and there among the predominantly spindle cells with abundant collagen are a few large irregular cells. The first time I reviewed this tumor I believed that it was a fibrosarcoma because it was rich in fibrous tissue and I could see what I thought was transition between the large abnormal cells and the atypical spindle cells and because it seemed to be a tumor that was respecting the capsule of the node, in spite of the fact that in the gross description the tumor was noted as extending through the capsule of a mass of nodes that was spoken of as coalescent and adherent. Later, when I looked in detail at individual cells, when I remembered how fibrotic some of the Hodgkin's nodes become, I thought of Hodgkin's disease. There are also areas of focal necrosis described in the gross, which is in favor of Hodgkin's disease. Also there is no evidence of a primary tumor of a fibrosarcomatous nature from which this might have arisen.

I found on looking through my own series of slides a case which had been diagnosed as a fibrosarcoma arising from the stroma of a lymph node. This came from a moderately nearby location, just under the end of the clavicle. In that case there was no involvement of nodes elsewhere and the patient had twelve recurrences in the scar from the time of its inception in 1931 up to 1945. Therefore, I felt that if twelve recurrences appeared locally without going beyond that point, it certainly was not Hodgkin's disease. I wonder if there is any information as to the subsequent course of this tumor; whether the right axilla alone was involved or whether anything developed elsewhere?

DR. DEL REGATO: I have examined this patient subsequently. He received quite a heavy series of radiotherapy to the axilla and the tumor showed some regression, but not as much as is usual for Hodgkin's disease. Since the radiosensitivity is usually characteristic, I believe that those who made the diagnosis of fibrosarcoma might have some satisfaction out of that.

DR. WARREN: Time will make the diagnosis. I have rarely seen a case of Hodgkin's disease as locally extensive as this which remained in a single area. Usually these cases involve other regions. Frequently if there is an atypical type of Hodgkin's in one region, it will be much more characteristic when it appears elsewhere. This case is one I think must be held for the time being as an unusual malignant lymphoid tumor which falls either into the class of atypical Hodgkin's disease or an un-

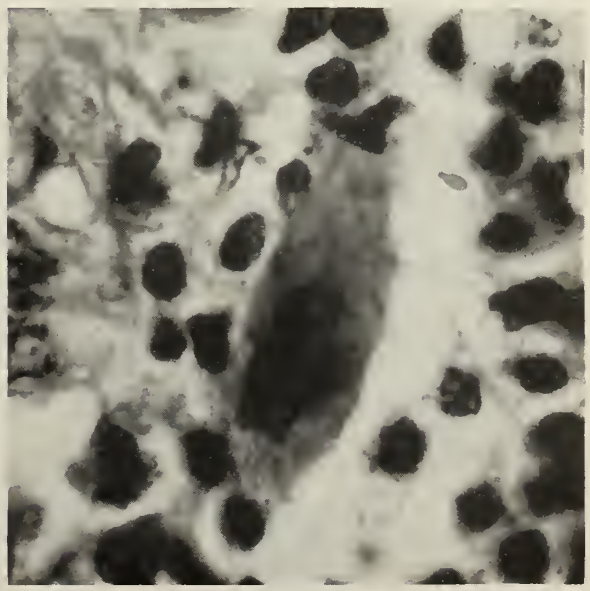
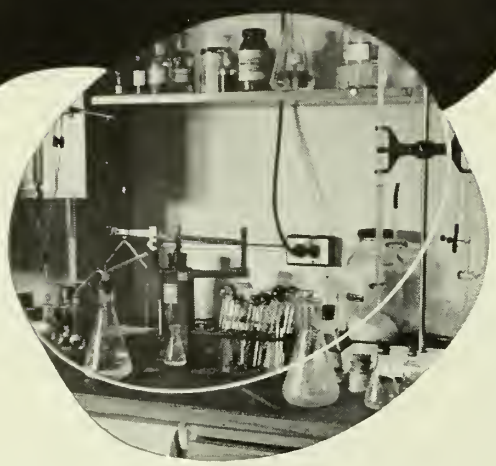


Fig. 11. Photomicrograph. Note large cell simulating Reed-Sternberg type with a multilobated nucleus and prominent nucleoli. (High power enlargement.)

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usual form of fibrosarcoma. I am classifying Hodgkin's disease as a malignant tumor; I trust that this group is in agreement with me.

Dr. B. F. Stout, San Antonio, Texas: Would you expect such a fibrotic process as this to take place in only a few months time?

Dr. Ackerman: I think the time interval was relatively short, but certainly no more than five or six months.

Dr. Warren: I would not think so in a Hodgkin's disease, for in the earlier stages the fibrosis is not too apparent. If one assumes that the history was as short as five or six months, I would be more in favor of an atypical fibrosarcoma.

PLASMA CELL LEUKEMIA

History (presented by Shields Warren, M.D., New England Deaconess Hospital, Boston).—Three months previous to admission on October 28, 1940, this 62 year old man noted gradual onset of dull pain in the lower back which was accentuated by movement. There was no history of injury or strain. The patient complained also of anorexia, weight loss of 20 pounds, some nausea (without vomiting), progressive weakness culminating in inability to walk without support, and pain in the ribs on deep breathing and raising of the arms. Physical examination at the time of admission revealed a pale, well developed, well nourished man who appeared chronically ill. With the exception of severe pain on movement, physical examination was noncontributory. Laboratory findings at the time of admission were: Urinalysis, within normal limits; red blood cells 1,440,000; white blood cells 9,400; Hb. 35 per cent; differential: polymorphonuclear leucocytes 48 per cent, lymphocytes 47 per cent, monocytes 4 per cent, and eosinophils 1 per cent. Roentgenograms of bones revealed many small areas of destruction. A blood smear was reported as containing 12 per cent plasma cells. The patient was discharged on November 7, 1940, his condition unchanged.

When readmitted on November 29, 1940, his condition was similar to that on previous hospitalization. Laboratory findings at this time were: red blood cells 1,960,000; white blood cells 203,000; Hb. 38 per cent; differential: polymorphonuclear leucocytes 12 per cent, lymphocytes 15 per cent, large monocytes 5 per cent and immature forms 68 per cent. The nonprotein nitrogen was 93 mg. per cent; serum protein 6.5 per cent, and Hinton test was negative. At that time, 3.75 millicuries of radioactive phosphorus were given on November 30. This resulted in a slight febrile reaction, the temperature rising to 101.8 F. one and one half hours following treatment. The patient was then given a transfusion of 500 cc. of whole blood. He showed some clinical improvement, the white blood cells decreased to 89,000 on December 1, and 139,000 on December 2, with a red blood cells count of 2,390,000 and Hb. of 44 per cent. Roentgenograms of bones at that time showed multiple irregular defects in the ribs, with fractures of the second and ninth on the right; the fourth, ninth and tenth ribs on the left, and defects compatible with multiple myeloma in the shoulder girdle, skull and wing of the right ilium. He was discharged on December 2, 1940, his condition definitely improved.

On December 8, 1940, he was readmitted in poor

condition and he died at 3:50 p. m., December 9, 1940.

At autopsy the sternum showed a pinkish gray mass of moderately soft tissue which bulged 1 cm. above the inner aspect, involved almost the entire thickness and extended from the fifth to ninth costal cartilages. In the ribs there were many foci of softening and fracture which on section showed thinned-out cortices and central areas filled with dark red marrow of almost fluid consistency. These varied from 1 cm. to 4 cm. in diameter and the larger showed bony cortex destruction. A mass of tumor tissue was present on the crest of the right ilium which measured 6 cm. in length, penetrated into bone, was pinkish gray in color, moderately soft in consistency and showed a glistening cut surface. The marrow cavities of the lumbar vertebrae were filled with almost fluid, dark red material, the cortex was thinned and trabeculae were virtually absent.

DR. WARREN: In this case the overwhelming majority is in favor of the plasma cell type of lesion. The most common cell type shows a relatively small amount of cytoplasm, a large eccentric nucleus with a rather peripheral arrangement of the chromatin reminiscent of the general structure of the plasma cells (fig. 12). In my slide there were also a number of multinucleated cells which also leads me to favor the plasma cell origin. There is considerable tendency for plasma cells to have multiple nuclei in both inflammatory and neoplastic lesions. Moss and Ackerman have written on plasma cell leukemia; their case was in an elderly male who developed a swelling in the region of the lower jaw as a localizing symptom. It will be noted that in this case there have not been any real localizing symptoms with the exception of gradual onset of pain in the lower portion of the back. In this history there is one point of considerable interest: the serum protein was 6.4, possibly below normal, and

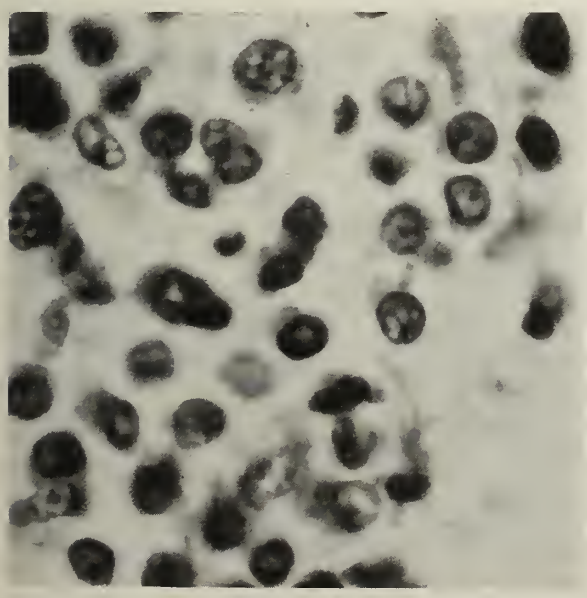
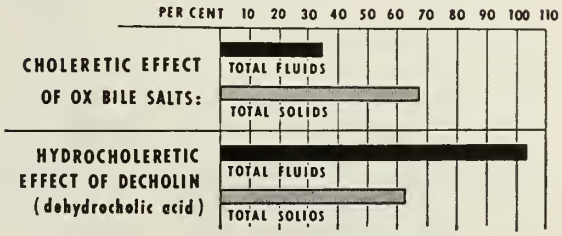


Fig. 12. Photomicrograph. Plasma cells from the bone marrow, some of them multinucleated with well defined nuclei and cartwheel arrangement of chromatin. (Moderate enlargement.)

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one would not think much of it if one did not check against the red blood count for, with a prominent anemia, a serum protein of that level is distinctly high. In a large number of cases of plasmocytoma and plasma cell leukemia, the elevation of the protein is a helpful diagnostic point. This patient had a nonprotein nitrogen of 93 and a microscopic section of the kidneys revealed many tubules occluded by casts. It is not infrequent with the elevation of serum proteins, in the presence of Bence-Jones protein or allied bodies, to have renal obstruction as a real problem. I have seen a number of these kidneys which looked more on section like an old chronic pyelonephritis of a type which simulates a section of the thyroid. This case was not from the start a leukemic type. It began with an essentially normal white count (9,000) with a perfectly normal differential. Possibly 47 per cent lymphocytes is a little high. Then in a few months time the white count had increased to 200,000 with the immature cells and plasma cell series being the predominant cell type. A fair number of the localized plasma cell tumors end up in a plasma cell leukemia. One of the points on which enough data has not been accumulated is the significance of local tumors which are rich in plasma cells and occur particularly in the region of the nasopharynx. At first, I thought those were entirely of a chronic inflammatory nature. I have had, however, two or three which I could not distinguish from the rest on initial biopsy, which recurred and progressed to typical myeloma with multiple bone involvement. I believe that it is difficult to say whether this is a tumor of multicentric origin with bone marrow cells as the primary type, or whether it is initially a small soft part focus (perhaps occult) and the bone lesions are metastatic. I would like to ask how many of you have seen either multiple plasma cell myeloma of bone or plasma cell leukemia with normal serum proteins.

Dr. Sam Gray, St. Louis: Whenever one sees a high blood protein one thinks of a multiple myeloma.

Dr. Warren: One point of interest in high blood protein levels: I was very much surprised to find that in spite of the largely rice diet of the Japanese this spring, they were all running practically high normal proteins: 8, 8.2, 8.4.

Dr. Ackerman: I have a feeling, Dr. Warren, that there are a great many variations of the pathologic picture, one shading imperceptibly into the other. For instance, at this hospital we have had the experience of lesions within the oral cavity which appeared to be primary oral cavity neoplasms, but when we took roentgen rays we often found we were dealing with a far-advanced process. On the other hand, we have had definite primary cases within the oral cavity. In this group it is important to appraise the regional nodes for they may become involved. It is possible in certain cases, particularly the well localized ones, that irradiation may be curative for this is a radiosensitive lesion. In plasma cell leukemia it was our experience, after reviewing the literature, that this type of case moved rather rapidly in its evolution.

Dr. Warren: When this man came to our hospital in late November he was in poor clinical condition and it was decided to see what radioactive phosphorous would do. We were not able to give him an adequate dosage, but as far as it could be told the response was not satisfactory. It has been my experience that whenever one has a rapidly progressing fulminating type of leukemia, whether it is a plasma cell or myelogenous, the cells in spite of the fact that they ought to be highly sensitive to irradiation, are exactly the reverse. I think all have seen cases of acute leukemia which theoretically should have done well with irradiation, but which actually have done poorly indeed. I wonder if Dr. del Regato would care to make any comment?

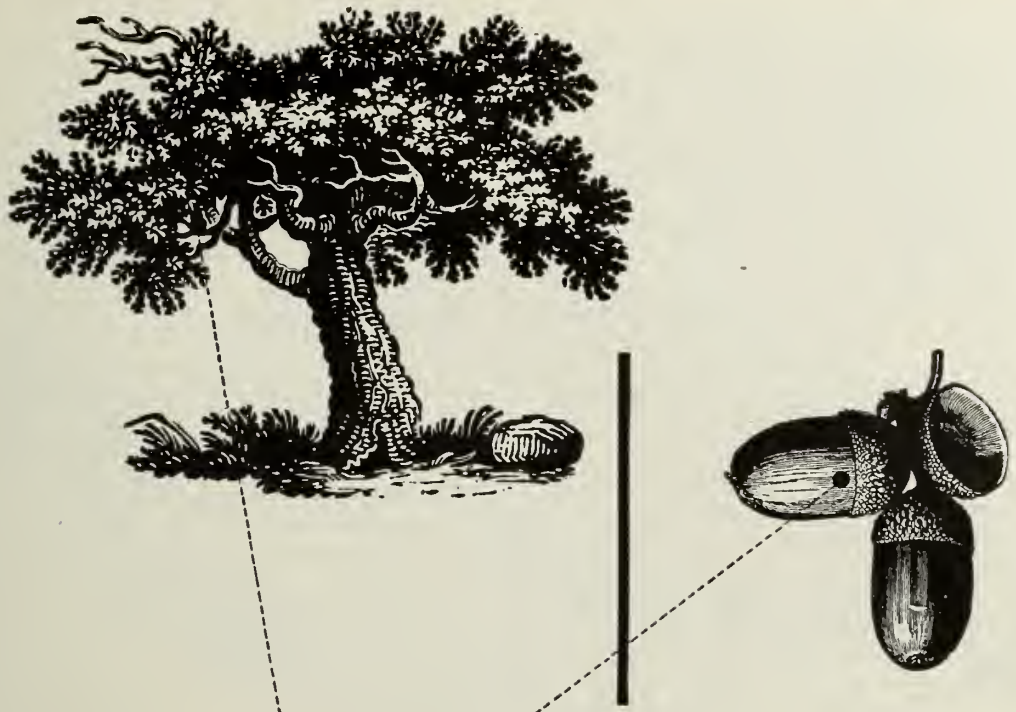
Dr. del Regato: Yes, sir. That is exactly our experience, Dr. Warren. It is usually said that radiotherapy is contraindicated in the treatment of acute leukemias. I would rather say that radiotherapy is not of much value in the treatment of acute leukemia. It probably does not do any harm. There have been several cases of acute leukemia that were kept alive with total body irradiation with relief of symptoms (diminution of leukocytosis and hemorrhagic tendencies) for periods as long as ninety days of daily irradiation. However, after that period of time or less, there is recurrence of leukocytosis and hemorrhagic tendencies. This new thrust of circulating young cells does not seem to be affected by irradiation.

Dr. Gustav Dammin, St. Louis: I wonder what the albumin and globulin ratio was when the blood proteins were done in November 1940? And the second question: at the time of admission when the white count was normal, it was stated that a blood smear was reported to contain 12 per cent plasma cells. Was it your impression that the tumors were present before leukemia, or vice versa?

Dr. Warren: I thought that probably since the roentgenograms of bones were already revealing many small areas of rarefaction, that in all probability, this 12 per cent plasma cells was the first indication of anything wrong, and that the lesion in the bone had been present for some time without any abnormality appearing in the blood. As a rule, these cases will run their entire course without plasma cells appearing in the blood even though a large proportion of the bone marrow may be occupied by them. I do not recall the exact ratio of the albumin and globulin in this case, but there was an appreciable increase in the globulin fraction.

Dr. Schenken, Omaha, Nebraska: Dr. Warren, would you care to comment on the relationship of amyloidosis to the problem?

Dr. Warren: In the cases that I have seen there has been at times an amyloid-like substance both in the tumor and in the kidneys, but I felt that



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there was perhaps a concentration or a precipitation of the abnormal protein rather than a true amyloid formation. When one sees this, there is not the characteristic amyloid distribution as one sees it in the liver.

Dr. Neal: In the section I have, there is in the edge of the muscle a trichina-like body.

Dr. Warren: I was not sure that it was going to show in all of the sections. That is keen observation. The frequency of trichinosis in the United States is surprisingly high. Has any one in mind what the percentage in St. Louis and Missouri must be?

Dr. Gray: I think the percentage in St. Louis must be at least 35 per cent.

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LEIOMYOMA OF THE STOMACH

History (presented by Arthur Purdy Stout, M.D., Columbia University College of Physicians and Surgeons, New York City).—This 60 year old housewife was admitted to the hospital on March 10, 1947, complaining of discomfort of the throat and upper sternum of three months' duration. There had been no nausea, vomiting, anorexia, change in bowel habits, melena or abdominal pain. A roentgenologist had interpreted a barium study as a "neoplastic structure at the terminal portion of the esophagus," and a biopsy taken at esophagoscopy was reported as carcinoma. Physical examination revealed a moderately obese woman who did not appear acutely or chronically ill. No abdominal masses were felt. Fluroscopic barium studies of the esophagus were reported as intermittent spasm of the lower esophagus with no abnormality of the cardia or fundus of the stomach. The patient was discharged on March 13, 1947.

Three months later she returned and roentgenograms at that time showed a probable lesion in the cardia. Laparotomy by the thoraco-abdominal approach showed a roughly spherical tumor mass about 5 cm. in diameter projecting from the anterior surface of the gastric fundus about 10 cm. below the cardia. The surface of the tumor was covered with fibrin and the adjacent gastric wall appeared inflamed. No enlarged lymph nodes were present and the liver appeared to be normal. The tumor was resected.

The gastric tumor was firm and projected 1.5 cm. into the gastric lumen where the mucosa appeared smooth and pink except for a 0.3 by 0.9 cm. punched-out ulcer in the center of the mass, giving the gastric aspect of the tumor the appearance of the cervix uteri. A narrow cuff of muscularis was attached around the specimen and did not appear abnormal. The main mass of the tumor projected 3 cm. out on the serosal surface which was pink and shaggy in appearance. On cut surface the tumor was pinkish white and trabeculated. Several areas of hemorrhage and degeneration were seen and a whitish 1.2 by 0.6 cm. nodule with apparent peripheral calcification was seen at one margin.

Dr. Warren: In this case there is a great variation of opinion. The variations of terms one sees on the neural side: neurinoma, neurilemoma or neurofibroma reflect not so much the variation seen in this particular lesion, but reflect the confused state of nomenclature of this group of neoplasms. Those who have been fortunate enough to hear Dr. Arthur Purdy Stout know how clearly and with what sharpness it is possible to establish the nature of these lesions associated with the peripheral nerves. I do not mean to imply that I am in favor of a neural origin in this particular tumor. The characteristic features of the tumor are the bundles of elongate cells, some of which have edematous swollen cytoplasm and others which have perfectly ordinary appearing cytoplasm. There are clear-cut masses of heavy collagen-rich supporting stroma. There is a suggestion of palisading of nuclei and the tumor itself is not demarcated too sharply. There is a hint of encapsulation but there are areas in which the tumor irregularly extends between strands of smooth muscle. The elongate cells have a close relationship to one another and in a number of instances the cells are applied closely to each other without apparent intervening stromal bands (fig. 13). This type of picture would favor a leiomyoma. The palisading, the swollen character of some of the cells, the ribbony, somewhat wavy appearance of some of the nuclei remind one of neural elements. I have a personal interest in these tumors since at a time when it was popular to describe most tumors of this type occurring in the stomach as fibromas, fibrosarcomas, neurofibromas or neurogenic fibrosarcomas. I favored a diagnosis of smooth muscle

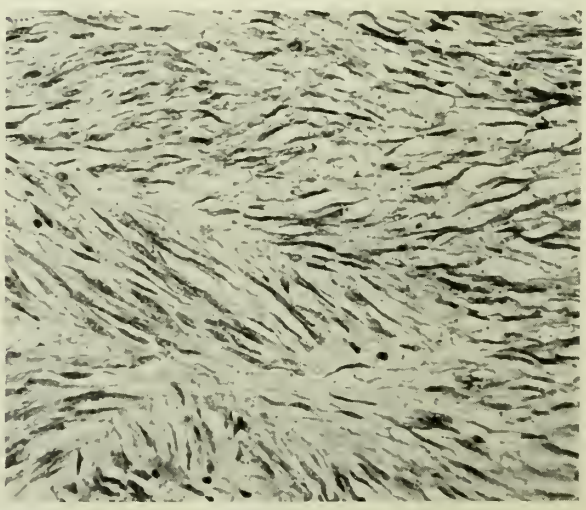
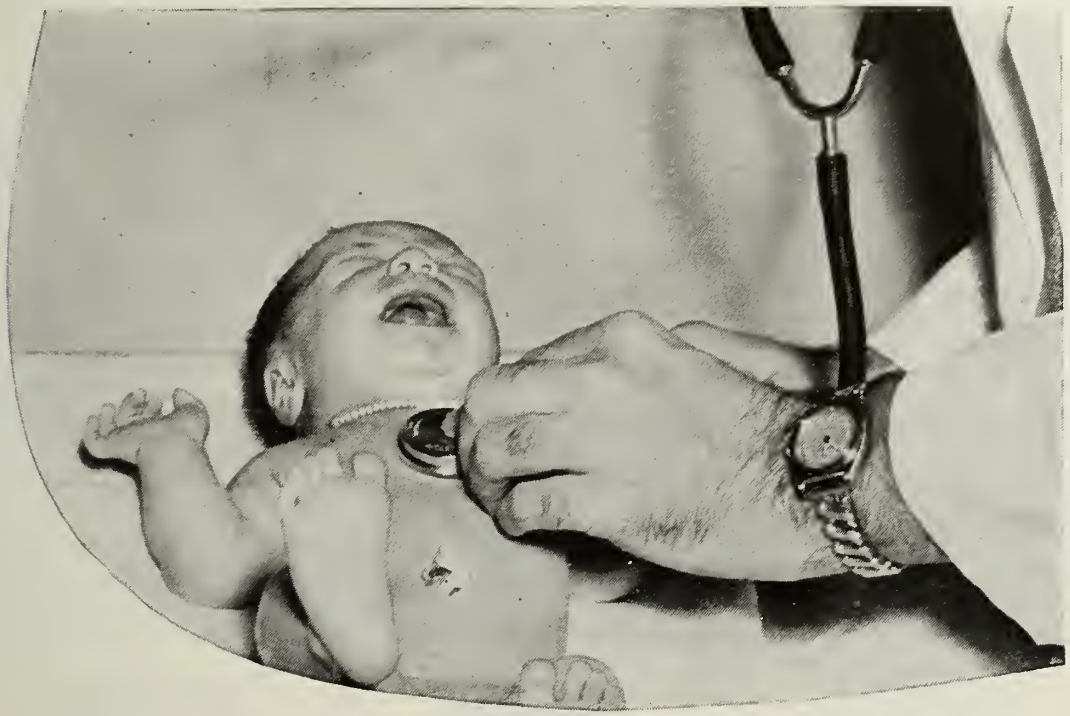


Fig. 13. Photomicrograph. Spindle shaped cells with little stroma and no mitoses. (Moderate enlargement.)



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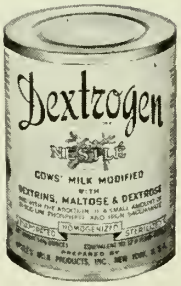
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tumors. Dr. Meissner of my laboratory and others have pointed out that these tumors frequently occur in an apparently normal stomach. The Mayo Clinic figures run around 20 per cent of all stomachs (Rieniets). In the routine autopsies at Pondville Hospital and the Deaconess Hospital, the figures were about the same and there were often 7, 8 or 9 in a single stomach. These are logical points of origin for the larger tumors. In the larger neoplasms there is frequently a characteristic roentgenologic picture, and I wonder if Dr. del Regato could outline for us what he finds in this particular tumor.

DR. DEL REGATO: It has been my experience that these cases sometimes do not show a filling defect in the stomach since they might be in the wall without encroachment on the mucosa.

DR. WARREN: My radiological friends have stressed this point to me, for at times the expansion of these tumors is not into the lumen of the stomach but toward the peritoneal cavity so that one might have a pretty good contour of the stomach by roentgen ray and miss the fact that there is a tumor within the wall of the stomach. These tumors are relatively low-grade in type and have a fairly good prognosis. The first one which attracted my attention was a tumor which the late Dr. Dan Jones, of Boston, removed; it weighed some 3 kg. and was accompanied by a huge ulcer of the stomach. In spite of these findings the patient recovered and lived without recurrence for some sixteen years. In this particular section I did not find any mitotic figures. I think that this could be regarded as a larger form of the small leiomyomas that one not infrequently sees. If it were not for the special stains, and only the slides in the Seminar group were available, it would be difficult to say whether this is a smooth muscle tumor or one of the nerve-sheath tumors of the neurilemoma group. In regard to the neurilemomas, have any of you seen one of these tumors arising from sympathetic nerves?

DR. GRAY: I have seen a case in which both peripheral and sympathetic nerves were involved.

DR. WARREN: Which one of the sympathetic nerves, Dr. Gray?

DR. GRAY: The phrenic, vagus and nerves along the abdominal aorta.

DR. WARREN: I am not quite clear whether the vagus is anatomically in the class of sympathetic nerves or not.

SPEAKER: The vagus is a part of the parasympathetic system which is, I believe, practically identical histologically to the sympathetic.

DR. ACKERMAN: Dr. Warren, would you comment on the importance of mitotic figures in calling these tumors benign or malignant?

DR. WARREN: I do not think that mitotic figures make a tumor a carcinoma or sarcoma. On the other hand, I think there are few of the benign tumors which have mitoses in them. I follow the principle that if I can find mitoses fairly readily, let us say they run more than 5 per 1,000 cells (assuming it is not a reparative tissue), that probably it is on the malignant side. If in addition to that, there are abnormal mitoses, I feel a good deal more certain. However, abnormal mitoses in themselves do not make a diagnosis of carcinoma. Dr. Pinkerton will remember a colleague who had a tooth extracted and, as there was considerable granulation tissue in the tooth socket, it was biopsied and this colleaque was appalled to find a tripolar mitosis. It took quite a little assurance from Dr. Pinkerton, myself and others that this could occur in normal granulation tissue. I would say that if I found one or two mitoses in this section, I would not change my diagnosis. I think that if I found a fair sprinkling of them, I would shift to a diagnosis of leiomyosarcoma. The reason I stress the fact that the capsule was not perfect in this tumor is because in a perfectly benign leiomyoma of the gastrointestinal tract there is not complete or perfect encapsulation. This, naturally, may simulate invasion, but this is not evidence of it being actually a sarcomatous process.

DR. GRAY: What proportion of smooth muscle tumors are malignant? There has been a recent series which showed a high percentage.

DR. WARREN: I think that hinges on how carefully benign tumors are searched for. Usually it is only the malignant tumors which reach a large and obvious size and if one takes all the incidental ones which are small, the percentage would be extraordinarily low. I think in the ones that become large enough to be palpated through the abdominal wall, the great majority of them are sarcomata.

DR. RABSON: I think in one of the monographs of the Henke-Lubarsch Handbuch it is recalled that the leiomyoma is the most common benign tumor of the entire gastrointestinal tract and, second, the question of the relative frequency of benign versus malignant smooth muscle tumors rests on the fact that too often the pathologist takes the criteria of the so-called leiomyoma of the uterus. In that instance one has apparent encapsulation and in the case of the myomas of the intestinal tract, I doubt if one ever sees encapsulation. In leiomyomas of the uterus, mitoses occasionally are identified at the periphery of the myomas.

DR. WARREN: I do not recall whether in the Henke-Lubarsch monographs they were speaking of large easily palpable tumors or including the small tumors. I believe they included all sizes and if one includes the small tumors which are extremely frequent, there is no question but that the leiomyoma is the commonest tumor of the gastrointestinal tract. If one takes the large neoplasms which get up to the size of one's fist, they are extraordinarily rare in the leiomyoma group.

DR. DECOURSEY: Does not the same article also bring out the point of palisading in both leiomyomas of the intestinal tract and uterus? I think it was called "rhythmic palisading."

DR. WARREN: All have seen a number of sections of leiomyomas of the uterus with as nice palisading

as one can see in any of the neural tumors, and I do not think that one is ever safe in regarding palisading as a characteristic of a neural tumor as opposed to a smooth muscle tumor.

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LEIOMYOSARCOMA OF THE ILEUM

History (presented by Shields Warren, M.D., New England Deaconess Hospital, Boston).—The patient, a 31 year old man, was struck in the upper abdomen by a heavy chain and the following morning a large lump appeared in the right lower quadrant. It gradually increased in size and the patient was given heavy irradiation over the area. He showed no improvement and died shortly thereafter. Postmortem examination showed a tumor mass in the wall of the ileum which projected into the lumen. It measured approximately 3 cm., was elastic, nodular and showed small central area of ulceration. This mass penetrated through the peritoneal surface, where it involved the bladder and rectal walls. Six centimeters above in the mesentery there were two marble-sized nodules of similar tissue. There were also nodular masses in the liver. The sections are from one of these liver masses.

Dr. Warren: In this tumor there is a suggestion of a line of cleavage or possible encapsulation, rather similar to the other tumor. One sees a rather loose network of cells, much less orientation of cells and nuclei than existed in the preceding tumor. Under high power variations can be seen in nuclear size and shape with often irregular nuclei, some of horseshoe shape and others of a spindle type (fig. 14). There are a fair number of mitotic figures scattered through it. The majority opinion of sarcoma holds. On detailed study, there were numerous clusters of closely-approximated cells of elongate type without collagen fibers between, and although reticulin stain was not used, I would say that the distribution of reticulum in this case is characteristic of a smooth-muscle tumor. This particular section is from the liver and there are a few clusters of liver cells in one side of the section. In this case there were also pulmonary metastases. In the primary tumor, as a result of ulceration, there was a central excavation. The most striking degree of such excavation which I have encountered was in a large leiomyosarcoma of the ileum which was not recognized for a considerable period of time. It attached itself to other loops of intestine into which there had been ulceration, so that the center of the tumor became a huge cavity filled with fecal material, with a number of stomata opening up into several loops of intestine to which it had become adherent. This is a good example of history of trauma in relation to tumor. It is noted that the patient was struck in the upper abdomen by a heavy chain and the next morning he had a large lump in the right lower quadrant. This mass was unusual in other ways. Ordinarily these leiomyosarcomas tend to remain intraperitoneal for a considerable period of time. This one had come in contact with the peritoneal wall, was invading retroperitoneally and was filling up the retroperitoneal tissues in the region of the pelvis. Ordinarily they are free within the peritoneal cavity and only attached to the intestinal tract itself.

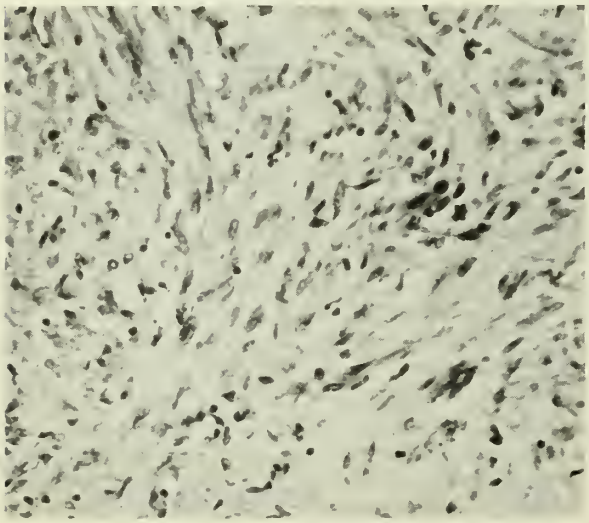


Fig. 14. Photomicrograph. Disorganized pattern of smooth muscle cells with variable size and moderate numbers of mitotic figures. (Moderate enlargement.)

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INTRADUCTAL PAPILLOMA OF THE BREAST

History (presented by Sam Gray, M.D., Jewish Hospital, St. Louis).—When first seen, this 45 year old nulliparous woman complained of a thin yellow, at times chocolate colored, discharge from the nipple of six weeks' duration. There was no associated pain. On examination, a marble-sized firm mass was present in the region of the nipple. This was surgically excised and on gross examination was seen to consist of the nipple measuring 2 cm. in diameter and a fragment of skin 0.5 cm. in diameter. Just beneath the duct there was a cystic 0.3 cm. mass which, on pressure, extruded soft yellowish tissue through the nipple. On cross section a firm white homogeneous nodule was seen just beneath the skin.

Dr. Warren: This type of tumor can cause as much trouble as any single neoplasm. The microscopic section demonstrates a lumen into which there are papillary ingrowths which have a fair degree of stromal support and stalks (fig. 15). There are no Paget's cells on the epidermal surface. This type of tumor can be difficult on frozen section. The symptom complex is a fairly characteristic one and the type of discharge described in the history is usual. Sometimes there may be actual bright red blood. Would you mind discussing this tumor further, Dr. Gray?

Dr. Gray: As Dr. Warren has indicated, this is the type of tumor with which those who do considerable surgical pathology have a great deal of difficulty. The decision as to whether it is benign or malignant is important for if the decision is on the malignant side the patient must have a radical mastectomy. Of course, one can always play safe and say this is malignant or will be malignant; the breast is removed, and if it is not malignant the patient will never have a cancer; but if it is malignant, one has done her a service. Personally, I call this a nonmalignant tumor for the reason that even though the cells lining the papilliferous arrangement do show some variation, still they are quite uniform. One of the difficulties in this type of tumor occurs when one looks along the outside of the wall of the tumor and sees a few small glands or probable cross sections of glands which give one the impression of invasion. Due to the irregularity of the surface, a section frequently will show glands lying beyond the so-called capsule or beyond the cystic structure from which it arose. I believe this is a harmless lesion of the benign group.

Dr. Warren: I am particularly glad that you stressed, Dr. Gray, that the duty of the pathologist is just as much to conserve tissue, if possible, as to see that it is removed when it is a reasonable source of injury to the patient in whom the lesion occurs. It is easy to say that this tumor is not cancer now but it will be pretty soon and one might just as well call it cancer. That is an unsound attitude to take.

Dr. Gray: I think the injury is not only physical through the loss of the breast, but I think that frequently it is mental, for it is difficult to convince the patient after one has taken the breast off that there is no cancer. Frequently, the pathologists do not have the courage to tell the patient that this is not cancer for fear their reputations might be impinged upon.

Dr. Warren: I wonder, Dr. Stout, if you would care to comment on this tumor?

Dr. Stout: The slide examined showed ducts at the periphery filled with cells which were not supported by fibrous trabeculae and demonstrated considerable anaplasia. This caused me personally to consider this neoplasm as demonstrating early malignant change. Frankly, I don't think that there was any reason to have done any more than was done for this case. It is a matter of academic importance or practical importance to note these slight changes, because one has been taught that the absence of fibrous trabeculae in these ducts with cells that are anaplastic means carcinoma.

Dr. Warren: Would you like to comment, Dr. Ackerman?

Dr. Ackerman: I think that these lesions are more often called malignant when they should be called benign than the reverse and I think that a high percentage of them are benign. I read Dr. Saphir's article on intraductal papilloma with interest. He makes a division of three separate types. In the first two types (invariably benign) the tumor was either predominantly fibrous or glandular. He felt that on serial section one could demonstrate the tendency of this tissue to invaginate from without into the ducts and that in most instances these lesions were single rather than multiple. In



Fig. 15. Photomicrograph. This demonstrates wall of intraductal papilloma with well defined and regular pattern of epithelial cells. (Moderate enlargement.)

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the third and smallest group (usually malignant) he drew a parallelism between the transitional tumors within the pelvis which have a tendency to implant along the ureter, while this third group of Saphir's have a tendency to implant along the duct system. For this infrequent third group, Dr. Saphir was prone to recommend radical treatment. Dr. A. P. Stout has made the observation that papillomas located away from the nipple have more chance of being malignant and that if one of them recurs after one removal, there should be no hesitation in doing radical surgery.

Dr. Warren: Would you care to comment, Dr. Moore?

Dr. Robert A. Moore, St. Louis: Certain factors should be kept in mind. One would be, of course, the anaplasia of individual cells and the problem of invasion. I don't think that one need necessarily wait in this type of tumor for invasion before saying that it is malignant. The diagnosis of malignancy can be made on the basis of anaplasia, lack of orientation and the distribution of the cells.

Dr. Warren: Another point of interest is the age incidence of these lesions. How many have seen a lesion of this sort appear after the menopause? Apparently no one has. It has been my experience that practically all of them appear in the younger or middle aged groups. One point of special interest is the question of therapy if this type of lesion is associated with any appreciable amount of chronic cystic mastitis. If the lesion occurred in an older woman with considerable chronic cystic mastitis, probably a simple mastectomy would be the safest procedure to follow rather than more conservative therapy. With these intraductal papillary tumors, occurring usually in younger women, there often is no other abnormality in the breast. In this instance the best treatment is simple excision.

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CYSTOSARCOMA OF THE BREAST

History (presented by L. S. N. Walsh, M.D., St. Luke's Hospital, St. Louis).—One year previous to admission on March 14, 1947, this 47 year old woman had noticed a consistently mildly painful lump in the left breast which gradually had increased in size. Physical examination revealed a stony hard mass almost filling the left breast. There was no attachment to the chest wall, the overlying skin had a peau d'orange appearance and did not move freely over the mass and there was no palpable axillary lymphadenopathy. The patient refused surgery and disappeared until May 19, 1947, at which time the mass had increased to double its former size, but there were still no axillary nodes felt. It was thought that this was an inflammatory carcinoma and that, as a palliative procedure, a simple mastectomy followed by irradiation should be done.

On gross examination there was an enormous, centrally-located, largely encapsulated mass about 14 cm. in diameter which showed great variation on section, presenting homogeneous gray areas, mucoid patches, cystic cavities and areas of cartilaginous density. In some zones the capsule appeared to be invaded by solid tumor tissue. The cyst fluid coagulated in formalin, had a greenish tinge and was translucent.

Dr. Warren: The microscopic section demonstrates areas in which there are elements of epithelial nature as well as strange mesenchymal zones. In other slides there are elongate cells with, at times, rather distorted nuclei and the fiber-poor intercellular substance (fig. 16). In this neoplasm there is a rather characteristic history in which the patient had a mildly painful lump which gradually increased in size, presumably over a considerable period of time. Although the mass was stony hard and practically filled the breast, there was no attachment to overlying skin. This again is a characteristic point in regard to tumors of this nature as to whether they are benign or malignant. I have seen lesions of the fibro-adenoma group weigh up to 1 kg. or more without evidence of fixation. There was no involvement of the skin in this case, no peau d'orange, and there were no palpable axillary lymph nodes. The patient was lost to follow-up for a while and for several months she apparently was unwilling to have anything done. During that time the mass increased to double its former size, which gives a good index of its growth rate. The gross appearance is characteristic and a protein-rich edematous fluid is characteristic. At times there was sufficient protein in it to cause coagulation, and its greenish translucent character was quite striking. The appearance of calcification within the tumor was interesting, but this particular tumor did

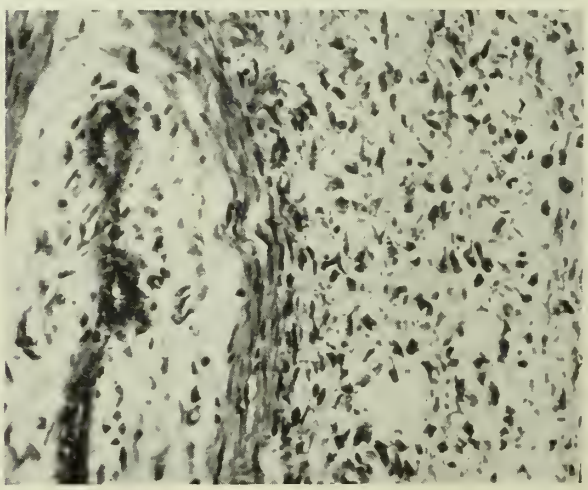


Fig. 16. Photomicrograph. Loosely arranged masses of cells growing in a myxomatous-like stroma. (Moderate enlargement.)

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not form bone. Some of them I have seen form appreciable amounts of osteoid within a wide variety of mesenchymal structures of all types. In spite of the huge size, there was no axillary metastases. I have had axillary lymph node involvement in about 5 per cent. There was a wide variety of diagnoses, and if one takes different areas in this tissue, it is easy to justify each diagnosis. I think the fundamental point to have in mind is: here is a fibro-adenoma; in all probability, the stroma has become markedly neoplastic and is differentiating in a variety of ways and, in some areas, it has differentiated hardly at all. I found some areas in this tumor in which there were cells that remind me of striated muscle cells and I found longitudinal striations in a few of them. I could not find any cross striations. Did anybody pick up any cross striations? Apparently none. There are other areas in which there is definite myxomatous structure. There are all types of differentiation of fibroblastic cells to fibrocytes. There are some cells with vacuoles in them which make me wonder about the possibility of a liposarcoma. In this particular tumor, the cell type is not too important. The clinical behaviour of these tumors seems to hinge more on relative encapsulation and the focal origin of a central point rather than on the characteristics of the involved cells. If one had a picture of this sort in a retroperitoneal tumor, the prognosis would be poor. The tissue could have been widely invaded yet, in this tumor, there is encapsulation in spite of the large size and I think the prognosis will be good. Since there are some portions that suggest liposarcoma, I looked up an article of Dr. Ackerman's and there, in reporting a multiple primary liposarcoma, he stressed the relationship of special mesenchymal cells of varying degrees of differentiation as well as the cells presenting fat. Would you like to elaborate a little further, Dr. Ackerman, with regard to these liposarcomas that are closely related to mesenchymal types?

Dr. Ackerman: I would like to say more about the specific type of tumor because of an experience in this hospital. This type of neoplasm usually occurs a little earlier in life than carcinoma and only infrequently metastasizes to nodes. However, if these lesions are incompletely or not widely excised, there is a great predilection to local recurrence. There is a case in the literature of the persistent surgeon and the submissive patient with twelve recurrences. The patient finally died of the thirteenth recurrence which was in the mediastinum (Hoffman). In the case at this hospital the lesion had recurred the second time and, while there were no palpable nodes, I felt because of the relative undifferentiation that a radical mastectomy should be done in preference to a simple mastectomy. A definite lymph node metastasis was found. Therefore, in consideration of therapy of this type of lesion, I believe that particular attention should be paid to wide removal—perhaps including pectoral muscles—and, if there is any question of the tumor being truly malignant, the patient should have a radical mastectomy. I believe that Dr. Neal has reported liposarcoma of the breast.

Dr. Neal: It was fortunately our luck that I reported what I believed to be the first case of liposarcoma in the male breast. But in a review of the literature at a later date, I found that there had been one reported from the Cook County Hospital some fifteen years before.

Dr. Warren: I tried to find in the literature as long as a duration of fibro-adenoma before it became malignant as possible and, in the French literature, there was a case reported by LeRoux. This case occurred in a 45 year old woman and the tumor had been present for thirty-four years before it began to grow suddenly. Because of the possibility of rhabdomyosarcoma, I looked up figures of Dr. A. P. Stout. He stresses the frequency with which they may occur combined with liposarcoma and the primitive type of fibrosarcoma. The average age of Stout's series of rhabdomyosarcomas was 42 years, and the average duration of the disease was about 0.5 years. In many of these there had been long periods in which the tumor had persisted from nine to twenty-odd years. The surprising thing from the standpoint of rhabdomyosarcomas is the poor prognosis; he presented 121 cases and only four were symptom free five years after operation. One finds striated muscle cells in many unexpected places, not only in teratoid tumors but in undifferentiated sarcomas of the nasopharynx. Striated muscle certainly does not belong in the substance of the breast, and thus it is assumed that there has been complete loss of differentiation to the primitive mesenchymal cells and then a partial redifferentiation along the lines of the striated muscle cells. This tumor can be designated as a cystosarcoma phyllodes of the breast.

Dr. Rabson: Fibro-adenoma was described almost 100 years ago and it apparently includes two categories. One group should be called fibro-adenoma phyllodes, in which the skin is not adherent, there is no peau d'orange, no enlarged lymph nodes and the skin is ulcerated only through pressure. Often the patient seeks relief not because of the mass which may last from six to twelve years but also because there is hemorrhage within it. The second group resembles the fibro-adenomas that are usually quite small. One rarely sees a fibro-adenoma greater than a few centimeters. I saw one last week that was 8 cm., which was the largest I have seen. Would you say that there is a difference in these two types, one being neoplastic and the other non-neoplastic?

Dr. Warren: That is a hard question to answer. The great majority of tumors, like the one recorded here, arise from small lesions which have persisted over a considerable period of time. A number that I have seen have recurred also after removal of a perfectly obvious fibro-adenoma from which I had



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not expected a recurrence. In general I think this lesion does not arise out of a clear sky but does come from preexisting fibro-adenoma. One can see in sectioning some of the more cellular, slightly larger fibro-adenomas transitional stages that are rather suggestive and which under appropriate circumstances might go on to form this sort of lesion.

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ADENO-ACANTHOMA OF THE CECUM

History (presented by Lauren V. Ackerman, M.D., Ellis Fischel State Cancer Hospital, Columbia, Mo.).—The patient, a 64 year old woman, was admitted to the hospital because of pain in the right lower abdomen of from eight to ten months' duration which was associated with some bloating and intermittent tarry stools. A barium enema revealed a large mass deep in the right lower quadrant which caused mesial displacement of the terminal ileum and cecum. The mucosal patterns of the cecum appeared to be intact. At the time of exploration a mass was found in the region of the cecum, and the cecum, ascending colon, 18 cm. of terminal ileum and the appendix were removed.

On gross examination there was a large firm yellowish gray circumferential mass in the cecum which obliterated the wall of the cecum and showed deep central ulceration. The appendix appeared to be normal.

DR. WARREN: The microscopic appearance reveals the general structure of the tumor with undermining of the normal mucosa of the bowel occurring in two forms: definite cell clusters which reveal clear-cut keratinization with apparently definite intercellular bridges (fig. 17), and glandular areas as well as keratinized areas (fig. 18). I do not believe that this tumor is a carcinoid. In the carcinoids the cells are smaller than in this tumor. I have not seen an instance of a carcinoid in which keratinization occurred. There are some characteristic glands also and in the usual carcinoid lesion there are no lumina. There may be a suggestion of lumina, but clear cut lumina with orientation of cells about them are not compatible with a carcinoid. The gross is much more characteristic of an extensive adenocarcinoma than of carcinoid. When carcinoids occur, it has been my experience that they rarely encircle the gut. It is also true that the carcinoid is slow to ulcerate even when large, and this is an ulcerating tumor. There are a fair number of carcinoids, particularly those which occur in regions other than the appendix, which metastasize, so involvement of lymph nodes is not helpful. When

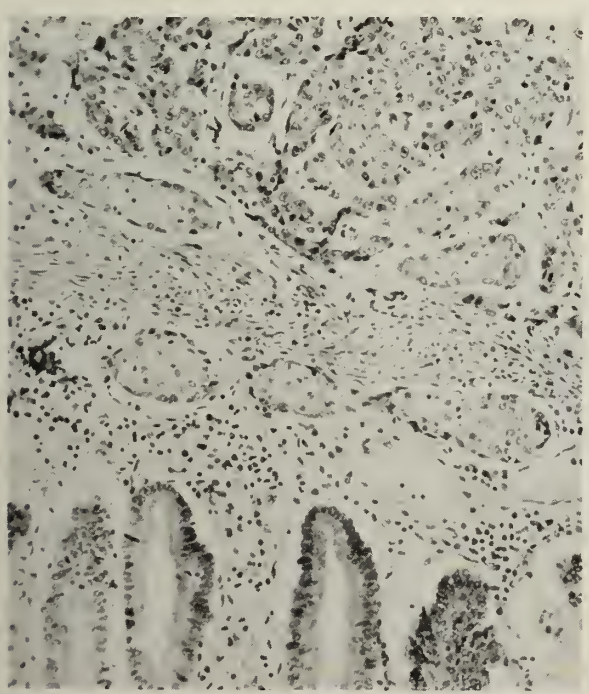


Fig. 17. Photomicrograph. Poorly differentiated squamous cells growing in lymphatics in the submucosa. (Moderate enlargement.)

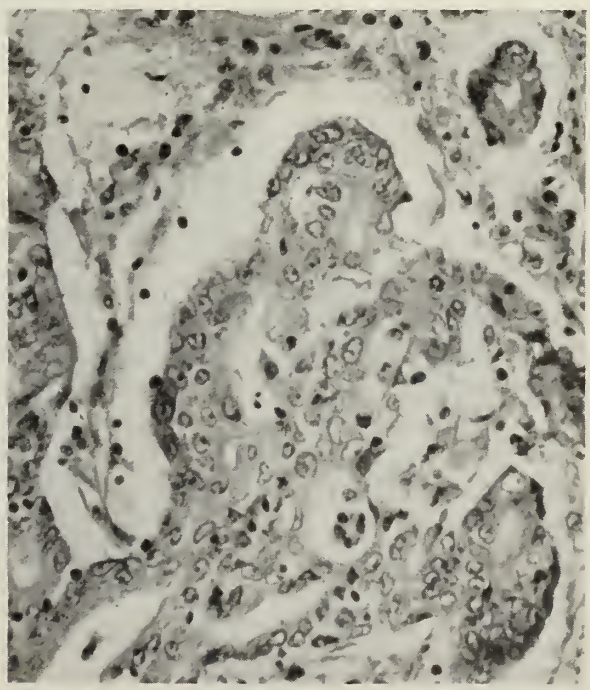


Fig. 18. Photomicrograph. Poorly differentiated carcinoma with glandular and squamous components. (Moderate enlargement.)

I have found a tumor of the gastrointestinal tract other than in the stomach that has keratinized cells and glandular areas, it usually has been a tumor of the cecum. In this type, I see several times as many cecal as sigmoid or rectal tumors. In rectal tumors I found only two that showed an adeno-acanthoma. More than one third of the cecal tumors that I went over showed the appearance of an adeno-acanthoma. My first experience with this neoplasm occurred in a woman who had multiple malignancies; she had an adeno-acanthoma of the uterus, and I tried very hard to make her second neoplasm of the cecum a metastasis of an adeno-acanthoma of the uterus. As I studied it further, I found more and more tumors of this sort occurring characteristically in the cecum and I came to the conclusion that actually one is dealing with two independent tumors. The stomach has a fair scattering of adeno-acanthomas and they frequently occur where two types of epithelium join; they are a little more frequent toward the cardiac end than they are in the body of the stomach. I have found it important from the prognostic standpoint to determine microscopically the presence or absence of blood vessel invasion. In the rectal tumors, it has been possible with the help of Dr. Lahey and Dr. Cattell to work out the prognostic significance quite carefully; it is only an extraordinarily rare case (under 1 per cent) in which there has been hepatic metastasis without blood vessel invasion. The involvement of lymph nodes has been of little prognostic help in these lesions except if all the nodes are involved, one has a poor prognosis. On the other hand, the cases which have had blood vessel invasion have been uniformly much worse than the cases that did not have blood vessel invasion. I think that it is well to extend the check-up for blood vessel invasion from the thyroid where we have been doing it to the large bowel tumors as well, because its occurrence is fairly frequent there. Incidentally, this has not any immediate bearing, but it might be of interest: I went over a considerable number of carcinomas of the breast, and in only 3 per cent of the breast carcinomas (all pretty advanced lesions) was there blood vessel invasion; overwhelmingly there is a lymphatic spread in that type of tumor. There is a considerable number of pathologists who voted carcinoid here.

Dr. Ackerman: Dr. Gray asked about silver stains on it. Silver stains were noncontributory. There is, however, some further information on this case: this patient had definite evidence of blood vessel invasion. (In all large bowel cases Verhoeff van Gieson stains are done routinely to demonstrate the presence or absence of blood vessel invasion). This patient also had evidence of nerve sheath invasion and special stains for mucin also were done; these showed that tumor cells were forming mucin, which is against a diagnosis of carcinoid. Also, in a short period after operation this patient has already developed a large recurrence.

Dr. Warren: Has anybody any ideas as to why intestinal carcinoids frequently do metastasize and appendiceal carcinoids rarely metastasize? I have never been satisfied as to the difference in these two groups.

Dr. Ackerman: Do you think, Dr. Warren, that the size of the lumen of the appendix would have any bearing on the early diagnosis, as compared to the size of the ileum?

Dr. Warren: I think that might be a real point. Before the carcinoids in the appendix get large and have a chance to metastasize, there is pain and they are taken out early because of this symptom.

Dr. Stout: One sees more active peristalsis in the small intestine than in the appendix.

Dr. Warren: I think that is a good point, Dr. Stout. Certainly appendiceal peristalsis is a pretty sluggish and feeble thing. I remember one accident early in the days of the Palmer Memorial Hospital when a patient had some radium needles implanted in the nasopharynx and one of these needles became unthreaded and the patient swallowed it, much to the consternation of all concerned. The course of the needle downward was watched by fluoroscopy and, fortunately, it came to rest in the appendix where it remained for four hours. The surgeon went in and retreived the radium by way of an appendectomy.

Dr. Schenken: Dr. Warren, if you have small vessels completely full of tumor, how do you tell that it is true blood vessel invasion rather than artifact?

Dr. Warren: That is where the Verhoeff stain or any of the elastic tissue stains come in handy. The small lymphatics (lymphatics other than the thoracic duct) have practically no elastic tissue in them and the thoracic duct has relatively little. One of the main reasons that I like to use, as Dr. Ackerman does, a combined connective tissue and elastic tissue stain for checking on blood vessel invasion is that it makes the blood vessels stand out nicely by virtue of their elastic elements, and helps to differentiate them from the lymphatics. I think sometimes one is on pretty shaky ground in trying to determine whether tumors are simply lying in spaces in the tissue, particularly where there is a lot of smooth muscle as in the case of the large intestine, unless one does either a Verhoeff or one of the other elastic tissue stains.

Dr. H. T. Blumenthal, St. Louis: Dr. Warren, do you feel that besides the morphologic similarity there is a deeper relation between the carcinoid tumors and the bronchial adenomas?

Dr. Warren: I don't know. I have tried time and time again to carry out satisfactory silver staining on bronchial adenomas and I have not been able to demonstrate a positive silver stain at any time. There is a striking similarity from the point of view of the moderate power histologic picture. I have not been able to prove that similarity in spite of pretty hard attempts at it. Masson, who is really the expert in this field, has been interested in them

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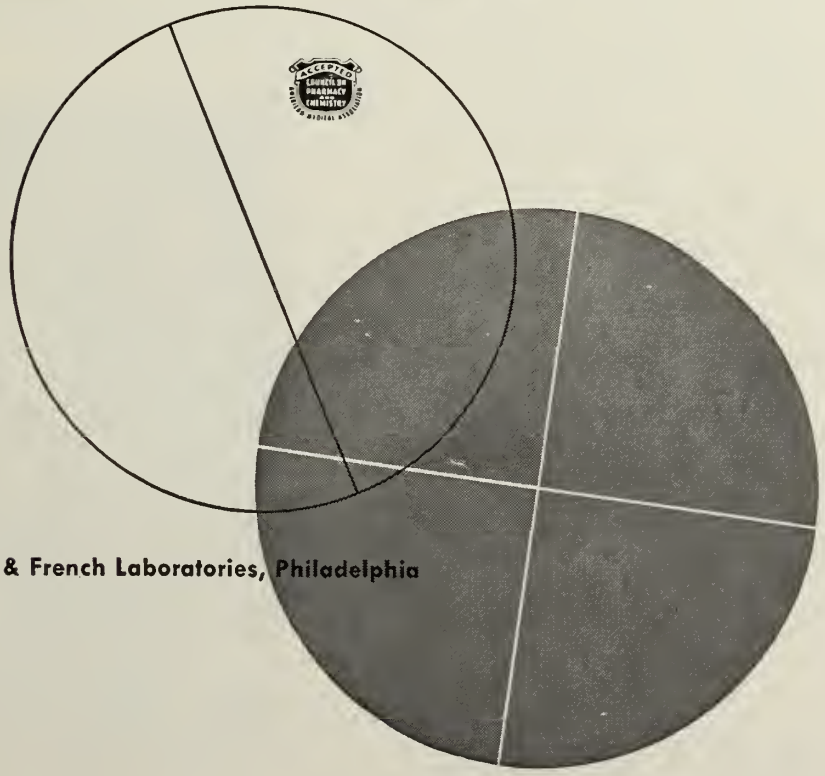
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and, up until the last I heard which was some two years ago, he had not succeeded in demonstrating clearly any argentaffine granules in the bronchial adenomas. Do any of you have any later information?

Dr. Moore: I might say, Dr. Warren, that Dr. Foot, of New York, had one example of bronchial adenoma back in the thirties in which silver stain showed typical silver positive granules. Whether or not he has made another observation of the same sort, I do not know.

Dr. Warren: I am interested to hear about it and will endeavor to find out whether there are more. As one looks at them under H & E stain, certainly they should be closely allied to one another.

Dr. Pinkerton: I would like to ask how many separate sections you do in the course of studying whether blood vessel invasion is present or not. I don't know whether these should be serial sections or sections taken at different areas of the bowel.

Dr. Warren: That is a hard question to answer. I have been using a routine of four sections through four different parts of the tumor and then a random section in the block. It is probable that one misses an appreciable number of the instances of blood vessel invasion in that way and that if more serial sections were taken additional evidences of blood vessel invasion might be found. My guess is that the frequency of metastases even from an invaded blood vessel is not high. It has to be pretty obviously involved so that it will be picked up readily on routine section before successful hepatic metastases are started. I have tried to check on that in reverse by taking the cases in which it was known there was hepatic metastases and checking to see what the initial diagnosis had been, and it checked closely with the routine four sections on them. One of the things that every pathologist has to keep in mind is how heavy he can load the technical side of his laboratory and what is what one might term of "practical" value rather than theoretical value. I think undoubtedly perhaps twice as many instances of blood vessel invasion might be found but I don't think that the clinical significance would be much increased.

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LYMPHOMA OF THE RECTUM

History (presented by The Army Institute of Pathology, Washington, D. C.).—The patient was an 18 year old white male T/Sgt. The only history available is quoted: "Protruded from anus. At about 1 inch from anus and pedunculated. Posterior wall of rectum."

Dr. Warren: In this case, the malignant lymphoid tumors are well in the lead. This is a characteristic type of lesion: a polypoid growth with normal mucosa spread smoothly out over a region of heavy lymphoid infiltration and, in this area of heavy lymphoid infiltration, there are not only the normal cells, but there are some enlarged cells of reticular type as well (fig. 19). This appearance, then is of a tumor in which there are many well differentiated cells. Now, there are two problems: first, is it an inflammatory lesion or is it a tumor? Second, if it is a tumor, what specific type of lymphoid tumor is it? From the hyperplasia viewpoint, in lymphoid hyperplasia as seen elsewhere in the intestine, whether it appears acutely as in typhoid fever or whether it occurs chronically as in regional ileitis, one does not see this type of isolated polypoid growth occurring. The fact that this growth is fairly circumscribed and is well-demarcated from the rest of the intestinal wall leads me to believe that it is a true tumor. The type cell within it is a fairly mature lymphocyte with some scattered reticular cells. Now, those who like to call a tumor a reticulum cell sarcoma because it has reticulum cells in it would call this a reticulum cell sarcoma. I like to see the predominant cells the reticulum cell before calling it a reticulum cell sarcoma. The presence of some reticulum cells does not necessarily make it a reticulum cell sarcoma, because even a normal lymph node has a fair proportion of reticulum cells present and in any one

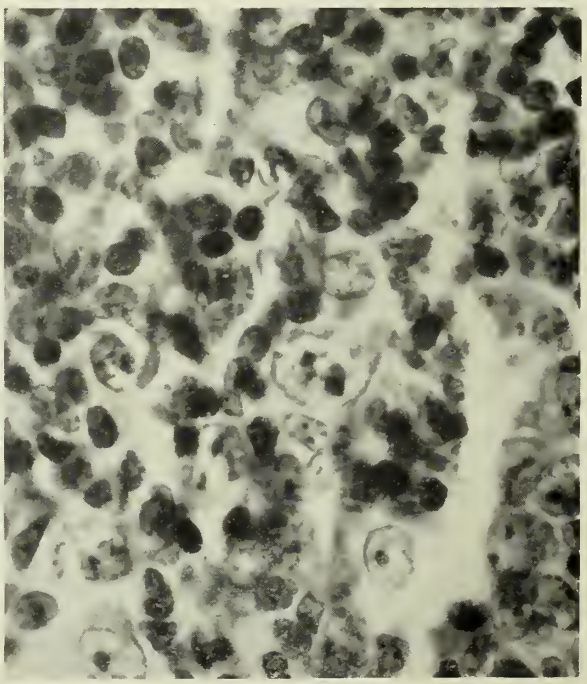


Fig. 19. Photomicrograph. Well differentiated cells of the lymphoid series and large reticulum cells. (High power enlargement.)

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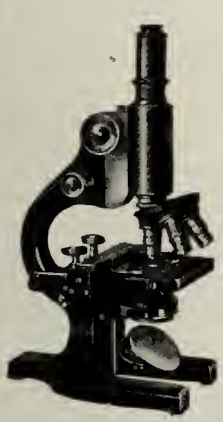
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of the lymphoid tumors, so far as I know, there are some reticulum cells. So this tumor I would call lymphosarcoma, or if one wants to be fancy about the subdivision of these tumors, which probably is not justified, I would put it in the better differentiated of the lymphoid sarcomas and call it a malignant lymphoma or a lymphocytoma. Now, there has been little interest until recently in these tumors. They are pretty rare and have not been too well recognized. A study was made of 3,132 malignant tumors of the gastrointestinal tract at the Deaconess Hospital and Pondville. Twenty-eight of them, or .9 per cent, were solitary lymphoid tumors; of those, fourteen were in the stomach, eight in the large bowel and six in the small bowel. Of the eight occurring in the large bowel, three were of this polypoid rectal type (Warren and Lulenski). It is a small proportion of the tumors of the bowel in general and a relatively small proportion of the lymphoid tumors as well. I do not see any follow-up on this case. In some of my cases I have had as long as eight years follow-up and there has been no recurrence with a local removal of the growth, all of the stalk being removed. That makes one wonder, of course, as to whether one really is warranted in calling these malignant tumors, but, in view of the nonencapsulated mass of cells, with evidence of growth, with evidence of some loss of differentiation and no normal pattern, I think one is warranted in calling it tumor. Nonneoplastic lymphoid tissue has a tendency, whether it is inflammatory or not, as long as some of the lymphocytes build up to any degree, to make secondary follicles, and in this case I do not recall that there was secondary follicle formation. Can you check me on that, Dr. Ackerman?

Dr. Ackerman: I found none.

Dr. Warren: I think it is just a more or less structureless mass, and that would be strong evidence to my mind against this being an inflammatory type of lesion. Any aggregation of lymphoid cells as large as this of inflammatory type would certainly have in its structure secondary follicles appearing among them. Col. DeCoursey has been quite close to the registry of lymphomas at the Army Institute. I wonder if he would like to add any comments on this?

Col. DeCoursey: No, except I think I saw follicles in this.

Dr. Warren: Good. We will have to reexamine it. There's a suggestion of one, with a possible outline. I would hesitate to call that a really good follicle. Certainly I would say that follicles in the form that one usually sees them in inflammatory lymphoid tissue are not apparent here. Here and there are larger cells of reticular type that I think led some to put this in the category of the reticulum cell sarcoma. There is a suggestion of a follicle, but I would like to see rather more sharply-defined follicles scattered through it before regarding it as sufficiently characteristic to class it as inflammatory.

Dr. H. M. Wood, St. Louis: Do you think, Dr. Warren, that the good prognosis in this tumor is because of something inherent in the tumor itself or because of its location and configuration with early removal?

Dr. Warren: I think probably the location and configuration with early removal are the most important factors in the good prognosis of this particular tumor. The gastrointestinal lymphomas have a prognosis somewhat ahead of lymphomas in general. In 1942 we had a group of twenty-eight tumors of the gastrointestinal tract with three five year cures. This is a much higher proportion than one would find in lymphoid tumors elsewhere. I do not believe any of the series of lymph node tumors would be as high as that.

Dr. W. R. Platt, Louisville: What are the possibilities of a giant follicular lymphoma arising in this location and giving rise to this particular tumor?

Dr. Warren: I would think relatively slight because a giant follicular tumor as it spreads usually takes its characteristics with it. In this there was not a suggestion of the giant follicles or the coalescent secondary follicles that are so specially a feature in this type of tumor. The fact that a considerable number of these patients, rare as the lesion is, remain well for long periods of time, would not be important because some of the giant follicle tumors will go for relatively long periods of time but, sooner or later, the tumor usually becomes rapid in its evolution. A not infrequent history (some of Symmers' cases) went along for ten or twelve years and then took on a spurt of growth with loss of differentiation and the development of polymorphous cell sarcoma.

Dr. del Regato: Dr. Warren, you mentioned in the discussion the question of reticulum cell sarcoma, and that brought to my mind that many years ago Dr. Oberling, who originally described the reticulum cell sarcomas, told me that he did not think that more than 5 per cent of all lymphosarcomas were of that type. Now Dr. Arthur Purdy Stout who was here last year gave as his opinion that 50 per cent are of that type and, I believe, Dr. Fred Stewart says there are 90 per cent of that type. What is your own opinion on the percentage?

Dr. Warren: My own per cent would be closer to that of Oberling than the others. I do not like to call a tumor a reticulum cell sarcoma unless the predominant cell type is the reticulum cell. The mere presence of a few reticulum cells does not entitle a lymphosarcoma to be called a reticulum cell sarcoma. There are marked extremes: Dr. Henry Jackson, of Boston, is much more enthusiastic about calling lymph node lesions reticulum cell sarcoma than I am and Dr. Ackerman will remember, probably, frequently Dr. Jackson's coming into the laboratory, putting the slide under the scope and saying, "Oh, yes. That's reticulum cell sarcoma"; my coming along a little later or at the same time saying, "Oh, no, it is not a reticulum cell sarcoma."



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I believe that there is no real purpose served by attempting to differentiate the reticulum cell sarcoma as a type of tumor unless it is sufficiently distinctive, sufficiently clear-cut to be readily recognized and sufficiently varied from the usual type in clinical behaviour and prognosis to make it worthwhile to set it apart from the general run of the lymphosarcoma group. The reticulum cell sarcoma, as I see it, is one which makes one wonder when he looks at it whether or not he is dealing with a metatastic carcinoma. Now those who favor 50 to 90 per cent of the lymphoid tumors as belonging to this category are taking those isolated cells of reticular type that I pointed out in this case under discussion and by virtue of their presence, calling it a reticulum cell sarcoma. It is exactly as though there was a group of vessels at anchor in a harbor and because there are a few trawlers among them, calling them all trawlers, regardless of whether there were battleships, tramp steamers and liners mixed in with them.

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HEMANGIOPERICYTOMA OF RETROPERITONEAL SPACE

History (presented by Lauren V. Ackerman, M.D., Ellis Fischel State Cancer Hospital, Columbia, Mo.).— This 68 year old man entered the hospital because of lower right abdominal pain, constipation which was relieved only by enemas, and prominent abdominal distention. On physical examination he appeared chronically ill. The abdomen showed no definite palpable masses. A scout film of the abdomen showed a rounded mass with calcification within it at the level of the twelfth rib posteriorly and lateral to the vertebral column. A barium enema was within normal limits and a gastrointestinal series showed no intrinsic lesion. On exploration a large mass was found in the right retroperitoneal space situated between the kidney and the right adrenal. It apparently was encapsulated and was removed with considerable difficulty.

On gross examination the mass weighed 1,020 gms., appeared encapsulated and, on section, was cellular with areas of hemorrhage, necrosis and focal zones of calcification. The patient's postoperative course was stormy but he left the hospital on the sixteenth postoperative day.

Dr. Warren: I am well pleased that evidently there is a varied opinion here. The gross reveals an encapsulated tumor with an attached normal adrenal. The kidney was not involved. So here is a huge retroperitoneal tumor situated between the kidney and the adrenal which did not involve either. The microscopic appearance is puzzling. There are rather nondescript cells tending to be somewhat elongate with a suggestion of clustering and orientation of these cells relative to one another (fig. 20). If one had only that, I do not think a diagnosis could be made. In the higher power there is a tendency again to the clustering of cells and with distribution of the chromatin rather reminiscent of the cells of the endothelial family. In general,

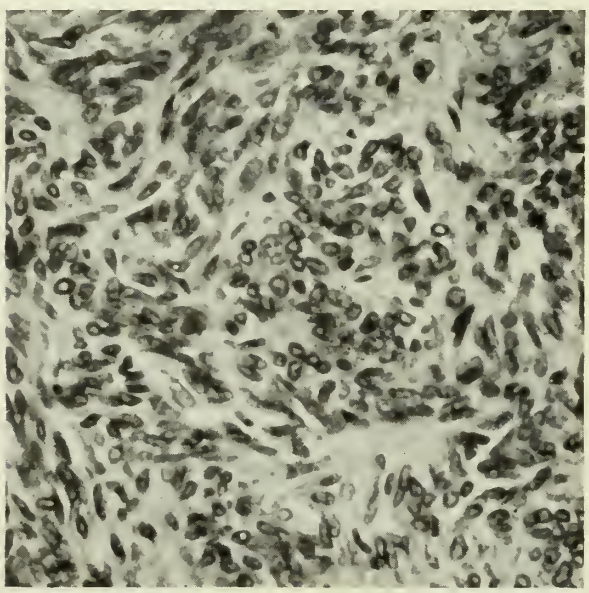


Fig. 20. Photomicrograph. Well differentiated cells suggesting blood vessel origin, grouped around slit-like spaces. (Moderate enlargement.)

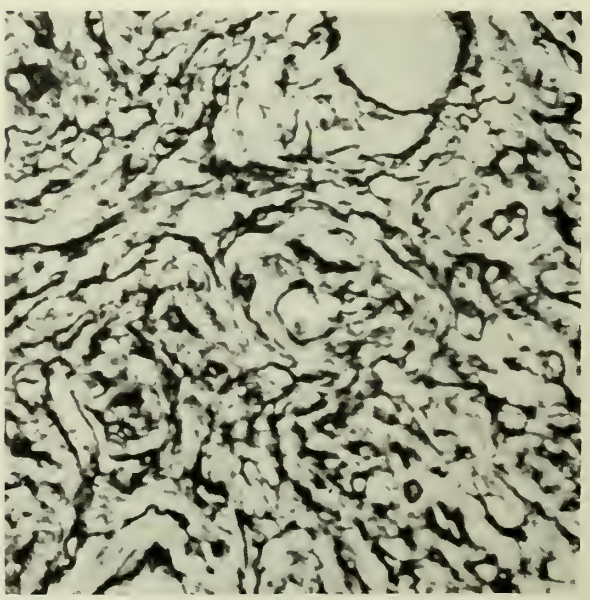


Fig. 21. Photomicrograph. Wilder stain for reticulum. Even patterning of reticulum suggesting blood vessel origin. (Moderate enlargement.)



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there are not enough changes to enable one to call it flat-footedly an endothelioma. Now Dr. Ackerman has a reticulin stain and one can see the diffuse, even patterning, of the retimulin which helps to rule out some of the other diagnoses (fig. 21). I think that one can, in light of what is seen here, rule out the sympathicoblastoma, Schwannoma and neurofibroma; the reticular nests would not be compatible for a diagnosis of neurofibroma. Neuroblastoma might puzzle a little because there are some elongate cells the same as some of these clusters, and there are attempts at rather poor rosette formation, but none of them are sufficiently satisfactory for a diagnosis of neuroblastoma. One has to consider malignant melanoma of the spindle type. First, there is no pigmentation; I do not know that that means much because there are plenty of amelanotic melanomas, but the type cells here and the nuclei are not characteristic of the nuclei of the melanoma cells. The nucleus of the melanoma, even in the more spindly type of melanoma, is rarely as consistently elongated as the nuclei are here. There is no fairly prominent, rather clear, sharply-demarcated cytoplasm that goes along with a melanoma nor the abnormal mitoses and the bizarre tumor giant cells which are frequent in the more malignant forms of melanoma. I do not find sufficient clear-cut vessels to be satisfied with a lymphangioma. For the diagnosis of lymphangioma, I like pretty good lymph vessels to be forming and evidence of lumina within the cell clusters. Now, the next problem is whether to consider this as an undifferentiated type of primitive mesenchymal tumor or whether to consider this as a tumor of the hemangiopericytoma group. There are some who would properly say, "Well, we see cell clusters similar to these; we see suggestions of circular or pseudocircular arrangements of nuclei in some of the tumors of the primitive myotome that might go on, as in a Wilm's tumor, to form renal tubules eventually. The location also would be in favor of this." Dr. Ackerman, I wonder if you would care to discuss this further?

Dr. Ackerman: I felt first when I looked at this tumor that it might be of vascular origin for I could see areas which suggested that cells were grouped around vascular spaces and that the individual cells somewhat suggested endothelial origin. Now this tumor also was an encapsulated tumor with calcification in it and, therefore, it was apparently of fairly long duration. I considered the diagnosis of hemangioendothelioma, the malignant tumor of blood vessel origin. In that tumor usually one has, as Stout has pointed out, layering of the cells within the lumen against the framework of the reticulum and with anastomosing areas. The layering of cells was not present. Stout has been interested in a group of lesions of this character which he has designated as hemangiopericytoma; pericyte coming from the pericyte of Zimmerman, a modified smooth muscle cell. He has been able to demonstrate with Masson-trichrome stain that these cells suggest smooth muscle or modified smooth muscle origin. With a reticulin stain and with Masson-trichrome stain, and with the encapsulation of the tumor, I timidly called this a hemangiopericytoma. Now, hemangiopericytomas as a group grow rather slowly, metastasize reluctantly, but these tumors, however, can recur. Dr. Stout also concurred in this diagnosis. I think that this patient probably will have a fairly good prognosis; however, I think that the prognosis must be uncertain for there is a chance for local recurrence.

Dr. Warren: That is a clear exposition of the probable nature of this tumor and of the type cells involved. I think we all owe Dr. Stout a great deal for what he has done to advance knowledge of the tumors of this vascular and endothelial group, as well as the fine progress he has made in clearing up many of the tumors of nerve origin. This tumor I think is of special interest from the growth relationships. Here is a large tumor, 1,020 gms., which was still encapsulated, which elbowed its way between the adrenal and the kidney without involving either, and which for that reason must be assumed to be of low-grade malignancy. And then with the calcification as further evidence of slow growth, I think one can fairly assume that the probability is that the patient in this case will continue to do well and metastases will not appear. One of the things that struck me in going over this tumor was the rarity of mitotic figures and the complete absence of abnormal mitoses.

Dr. Neal: I would like to ask, why hemangio-? Why not lymphangio- or angio-?

Dr. Warren: I think one reason would be that some of the vascular slits contained red cells.

Dr. Gray: Dr. Stout has reported a group of tumors he calls mesenchymomas.

Dr. Warren: As a matter of fact, that is a group in which I was seriously considering placing this tumor; the location is good for these queer neoplasms of mesenchymal origin as remnants of primitive myotome frequently do remain behind in this area, and my memory is that in these relatively primitive mesenchymal tumors one does not find the type of regular patterning of the reticulum as was brought out by the stain in this case. Also, there is usually more in the way of mitotic activity and immature cells.

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? BENIGN GIANT CELL TUMOR OF TENDON SHEATH

History (presented by Lauren V. Ackerman, M.D., Ellis Fischel State Cancer Hospital, Columbia, Mo.). —The patient, a 74 year old man, was admitted to the hospital on July 10, 1947, complaining of a painless lump of the right anterior chest which had been present for four months and had gradually increased in size. Physical examination was noncontributory except for the tumor mass located beneath the uninvolved skin on the right anterior chest wall and questionably attached to the right sternoclavicular area. There was no regional lymphodenopathy and roentgenograms of the chest were normal.

The tumor was rather radically excised; it measured 7.5 cm. in diameter, was relatively firm, yellowish brown in color and showed a few areas of necrosis.

DR. WARREN: The majority of the pathologists here are anxious to call this a malignant neoplasm. The hemisection of this tumor shows it to be fairly homogeneous and yellowish tan in color. The microscopic appearance reveals the presence of giant cells of the foreign body type, of spindle-shaped cells, and of rather nondescript cells of indefinite character with a moderate amount of chromatin in the nucleus (fig. 22).

DR. NEAL: What about those vacuoles?

DR. WARREN: There are scattered vacuoles throughout. Some of the giant cells have striking vacuoles. There was some hemosiderin present. I thought this was a giant cell tumor but one of the benign ones rather than a malignant one. First, the yellowish-tan color with a somewhat lobulated or moderately compact tumor, is pretty indicative of a tumor of the benign giant cell family. Foster had an article about a benign giant cell tumor of the tendon sheath in which he tied it in with the sclerosing hemangioma. I am not ready to go 100 per cent of the way with him, but there are some well-defined points. He has carried further a view that Dr. Wolbach has had for some time and that I am inclined to share to a considerable degree: that there is a marked gradation all the way from the ordinary run of the hemangioma through the sclerosing hemangioma to some of these benign giant cell tumors. In this tumor there are the giant cells of foreign body giant cell type, some of them with inclusions and some without. One assumes that the reason the giant cells formed initially was that there was something there to stimulate their formation and that the ones which have no vacuoles have successfully digested what had been within them. Second, there has been a hemorrhage in the region, as evidenced by the hemosiderin. Third, the fibrosis implies that there probably has been a definite stimulus for fibrous tissue proliferation, which may be due to old blood from hemorrhage. Wolbach has long been interested in this type of tumor and it is well to remember that as far back as 1912 he had a paper on the hemangioendothelioma, giving the histologic appearance of giant cell xanthoma. He has been pretty consistent in continuing his emphasis on this field. Apparently, aside

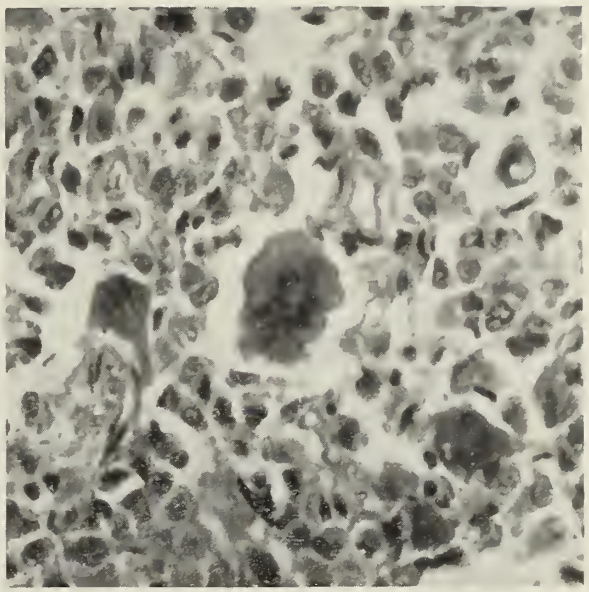
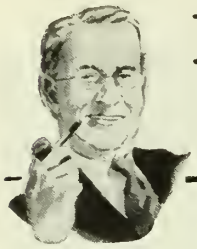


Fig. 22. Photomicrograph. Note numerous giant cells with multinuclei and well differentiated cells surrounding them. (Moderate enlargement.)

from Foster's article, there has not been any very special interest in this field during the last few years. An article by King from England back in the early thirties described the extra-osseous type of the giant cell tumor, not attempting to separate the tendon sheath group from the others. He brings out that there may be the spindle cells with various gradations down to a spheroidal type, that there are the vacuoles, many of which contain material which stains positively for fat, and some may be so marked as to resemble a lipoma; and that the giant cells are present and often spottily present, sometimes closely packed in areas of almost solid giant cells, and other times, relatively few. And then, in addition to the spindle cells, are these spheroidal types of cells I mentioned that tend to occur in clusters and bundles and sometimes become multinucleated. There is much intercellular material laid down, mostly collagen, and frequently there may be foci of mucoid degeneration. I have seen some of these which make one wonder whether he is dealing with an inflammatory reaction in a traumatized area—the ganglion, for example—or whether one is dealing with a degenerated area. This tumor has been thought to have a possible relationship with the synovial tumors. That is not so well supported, however. The commonest lipoid present is a cholesterol-rich lipoid and frequently pure cholesterol crystals are present. All have undoubtedly, on frozen sections, caught doubly refractile crystals. The giant cells with the vacuoles are incidental in this tumor and I am inclined to believe that probably this general group of tumors is a true tumor. I do not go as far as Jaffe and Lichtenstein do to say that the tendon sheath tumors are purely

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by Joe Marsh

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And Will admitted she was right. It just goes to show that the way somebody dresses isn't always to our taste —just as Will's glass of beer may be another person's cider.

But from where I sit, those little differences aren't important—unless we go out of our way to make them so, by being hypercritical. As Will says now: "Well, anyway, those long skirts hide a multitude of shins". . . and lets it go at that!

Joe Marsh

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inflammatory phenomena, but I believe that they are initially neoplastic, probably of endothelial origin and with a terrific superimposed response that is reaction to lipoid-rich material and to areas of old blood either from the vascular channels present or from hemorrhagic foci that have occurred. What did you think, Dr. Ackerman?

Dr. Ackerman: I will have to say that I did not know what this tumor was; but I think, in retrospect, that Dr. Warren is entirely correct. I think that if one agrees that it is a giant cell tumor, whoever says that it is a malignant giant cell tumor, is going to put himself in a group in which there have been only rare, if any, malignant ones before this.

Dr. Schenken: Dr. Warren, I believe that I have had an osseous one that I will see in heaven, I hope, that I doggedly maintained was benign for about three or four recurrences and the patient died of metastases. You, Dr. Warren, saw the sections of this tumor and you suggested repeatedly that it must be malignant.

Dr. Warren: I think that in giant cell tumors that arise from bone, one has to study them carefully for evidence of a malignant tumor. I have yet to see one of the extra-osseous type which is clearly malignant. I did see a woman at the Palmer who had a tumor of the radius which was first curetted, then recuretted, and bone chips put in; she had some irradiation therapy in between these procedures. Finally it was necessary to resect the bone and then tumor recurred, necessitating amputation. She then got an extraosseous recurrence of that tumor in the soft parts of the stump. That was removed and she has been well for eleven years since, and I think will stay well. That was one of the most persistently recurring of the osseous giant cell tumors.

Dr. W. H. Bauer: I would be rather inclined to consider the tumor malignant since I saw in my slide an area of necrosis in the center, pleomorphism, an irregular pattern of distribution of giant cells, and even a few tumor giant cells.

Dr. Warren: That is a sound point. In the margin of areas of necrosis, reparative cells will become hyperchromatic without taking on malignant potentialities. I think that the areas you described were evidence of reparative activity on the part of the cells rather than evidence they had taken on malignant characteristics. That is only a matter of personal interpretation and ultimately we will have the answer in this case from the patient. We will then regard this tumor as belonging in the group of benign giant cell tumors and wait and see whether we are right.

PRESIDENT'S PAGE

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Robert Mueller M.D.



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MAY, 1948

EDITORIALS

WALLIS SMITH, M.D., PRESIDENT-ELECT

Wallis Smith, M.D., Springfield, was elected President-Elect of the Missouri State Medical Association at its 90th Annual Session in St. Louis, March 14 to 17. He will serve in his present capacity until the next Annual Session when he will be installed as President.

Dr. Smith brings to his new office much ability and experience in organized medicine. He has served the Association and the Greene County Medical Society throughout his years of the practice of medicine and many times has proved his unfaltering interest in the betterment of medical practice and the health of the people.

Born in Marshfield, Missouri, in 1886, Dr. Smith was named after his maternal grandfather, Dr. Christopher Wallis, who migrated to Southern Missouri from Tennessee in 1862 and served as a surgeon in the Confederate Army during the Civil War.

Dr. Smith was graduated from Drury College in Springfield in 1908 after which he entered Rush Medical College, which at that time was affiliated with the University of Chicago. At the end of two years he received his Ph. B. degree from the University of Chicago and two years later, in 1912, he was graduated in medicine from Rush Medical College. He interned for six months in St. Louis City Hospital and for twenty-one months in Cook County Hospital. In 1914 he established his practice in Springfield where he has remained in private practice continuously except for an interval of several months postgraduate work in Vienna in 1924 and 1925.

In 1915 he married Carlie Souter who had been a classmate in Rush Medical College and a cointern at Cook County Hospital.

Due to a lameness resulting from a tuberculous hip in childhood, Dr. Smith was rejected from service in World War I. However, during World War II the Springfield Chapter of the American Legion accorded him "Special Recognition for Outstanding Performance Beyond the Obligations of American Citizenship." During that war period he served for five years as chairman of the Greene County Chapter of the American Red Cross and, as Councilor, served on the committee on Procurement and Assignment.



WALLACE SMITH, M.D.

Dr. Smith's field is general surgery. He is a member of the staffs of Springfield Baptist, St. Johns and Burge hospitals. He is a Fellow of the American College of Surgeons and has been certified by the board of qualification of the International College of Surgeons of which society he is a Fellow.

His greatest interest is in organized medicine, in which he has served as president of the Greene County Medical Society, delegate from Greene County to the Missouri State Medical Association and, for the last seven years, as Councilor from the Eighth Councilor District.

His help always can be depended upon in philanthropic, educational and civic programs. He was a member of the original committee which organized the Springfield Community Chest and later served as president of that organization. He has been a member of the Board of Trustees of Drury College for the last twelve years. He is active in the work of the St. Paul Methodist Church, serving on the Board of Stewards and as chairman for five years. He was president of the Springfield Chamber of Commerce for two years and has been president of the Rotary Club.

His favorite sport is fishing which takes him on frequent floats on the streams of the Ozarks which

he claims are the favorite haunt of the small mouth bass.

The House of Delegates has chosen well its President-Elect for 1948 and President for 1949.

MEDICINE IN ENGLAND

The vote of the British Medical Association reported recently in the press is a vote against bureaucratic regimentation which cannot, by any stretch of imagination, be correctly called a "strike vote." At no time have our British colleagues implied a strike against those who have been and will always remain their only employers, their patients. The physicians of Britain have indicated no tendency to desert their posts of duty.

Neither moral law nor the ethics of medicine require the physician to subject himself to conditions under which service to his patients will be made onerous or, because of compulsion, the keen edge of that inward desire to serve made dull.

In view of these incontrovertible facts, the overwhelming objection of the doctors of Britain against the stifling hand of authoritarianism is readily understood.

A life worth living is worth fighting for. The life of medical practice soon would die beneath the sterile rays of a parliamentary made practice by edict.

The American people, the political weather vanes, the journalistic opportunists might well take heed. American physicians are made of no weaker stuff than our British brothers across the sea.

"HE THAT IS WITHOUT SIN AMONG YOU . . . "

As the shooting phase of World War II finished, a grateful American public demanded that Congress provide medical care for the veterans on an unprecedented scale. Nothing was to be left undone in providing for them the best system ever devised. With this *carte blanche* in hand, the planners of Veterans Administration set out to implement this philosophy of largesse.

Among the projects they included in their plans was the idea of decentralization—"hometown medical care for the veterans." This idea certainly was commendable and, to really give the ultimate in service, was a highly desirable—even necessary—component, of a complete care program.

The various state medical organizations were invited to cooperate and to set up their own organizations working with the Veterans Administration. Much time and effort were expended by members of our profession in the blueprint stage of developing an ideal service. Gradually, these systems of "hometown medical care for the veterans" took form and were used in many communities. Actually, things looked rosy.

However, as time went on, disquieting rumors were heard. It was whispered that the Veterans Administration budget was to be materially reduced and other disturbing defects in the overall system were discussed more openly. The annual crop of youngsters, fresh from medical school, who were destined to do the "scut work" in the Veterans facilities, dwindled to the vanishing point. Many top flight practitioners (who had been wooed into Veteran Administration, somewhat because of altruistic reasons) began to feel shaky, their future uncertain.

All these major reasons for holding the Veterans medical set-up somewhat in suspect existed before the "big blast" of a few weeks ago, which charged that some physicians were "chiselers" and "skunks." It was implied in this caustic, broadside critique by Dr. Paul Magnuson that these aforementioned scoundrels were responsible for the threatened financial collapse of the entire system.

Of course, any schoolboy knows that some few veterans would like to "milk" every drop of benefit from the Veterans Administration, even resorting to "gold-bricking." In this nefarious practice, they are most certainly going to find some few physicians who will play right along with them. This is human nature and even an act of Congress will not change it. When the fathers of the A. M. A. were confronted with this allegation, their rebuttal was direct and commonsense: "Give us a list of these chiseling characters and we will forward them to their respective state medical organization for investigating and for prompt, proper action."

Now let us see what has happened in Missouri. As of one week ago today, the executive office of the Missouri State Medical Association has not been informed of a single malefactor, either by the Veterans Administration or the A. M. A.! Between July 18, 1947, and January 1, 1948, 15,600 veterans have been examined or treated by "hometown physicians," who received $242,700.00 from the Veterans Administration. "There were no complaints and no charges of any kind against any physician in the State of Missouri"—this on the authority of a top drawer representative of the Veterans Administration.

The best editorials are always written by someone else and we will button this one up by concluding our titled theme—"He that is without sin among you . . . let him first cast a stone."

Written by Vincent T. Williams, M.D., and reprinted from the April 12 issue of the *Jackson County Medical Society Weekly Bulletin.*

NEWS NOTES

H. L. Mantz, M.D., Kansas City, was a guest speaker at the 68th annual meeting of the Louisiana State Medical Society at Monroe, Louisiana, on April 14. He spoke on "Diagnosis of Tuberculosis."

Drew Luten, M.D., St. Louis, was elected president of the Missouri branch of the American Heart Association at a meeting on March 16. Other officers elected are: A. Graham Asher, M.D., Kansas City, vice president; C. Braxton Davis, Nevada, secretary; G. W. Hendren, M.D., Liberty, treasurer.

Jesse E. Douglass, M.D., Webb City, was installed as president of the Missouri Trudeau Society at a meeting on March 14. Florence MacInnes, M.D., Kansas City, was elected president-elect.

W. Byron Black, M.D., Kansas City, recently was elected president of the American Society of Ophthalmology and Otolaryngology allergists.

Alvin J. Baer, M.D., Kansas City, recently was elected president-elect of the Kansas City Society of O. O. R. L. John C. Howard, Jr., M.D., was elected vice president.

David Littauer, M.D., Kansas City, was a guest speaker at the first annual meeting of the Western Missouri Association of Medical Record Librarians which was held in Kansas City on March 18. His subjects were "The Relationship of the Medical Record Librarian to the Hospital Administrator" and "The Hospital Council and the Association."

George E. Murphy, M.D., Kansas City, and Theodore H. Greiner, M.D., St. Louis, have received postgraduate research fellowship awards from the Life Insurance Medical Research Fund.

Mr. George Larson began active duties as executive director of the Missouri Division of the American Cancer Society at the headquarters office in Jefferson City on April 1, according to Mrs. Fred Thompson, Madison, acting president. Mr. Larson has been executive director of the Pennsylvania Division for the last two years and formerly was assistant secretary of the State Medical Society of Wisconsin.

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OPHTHALMOLOGY—Intensive Course, two weeks, starting May 10.
Ocular Fundus Diseases, one week, starting June 7.
GYNECOLOGY—Intensive Course, two weeks, starting June 7, September 13.
Vaginal Approach to Pelvic Survery, one week, starting June 21.
OBSTETRICS—Intensive Course, two weeks, starting June 21, September 27.
MEDICINE—Intensive Course, two weeks, starting June 7.
Personal Course in Gastroscopy, two weeks, starting June 28, July 12.
Electrocardiography & Heart Disease, two weeks, starting August 2.
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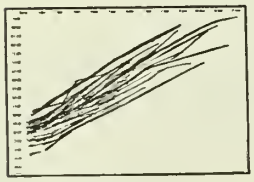
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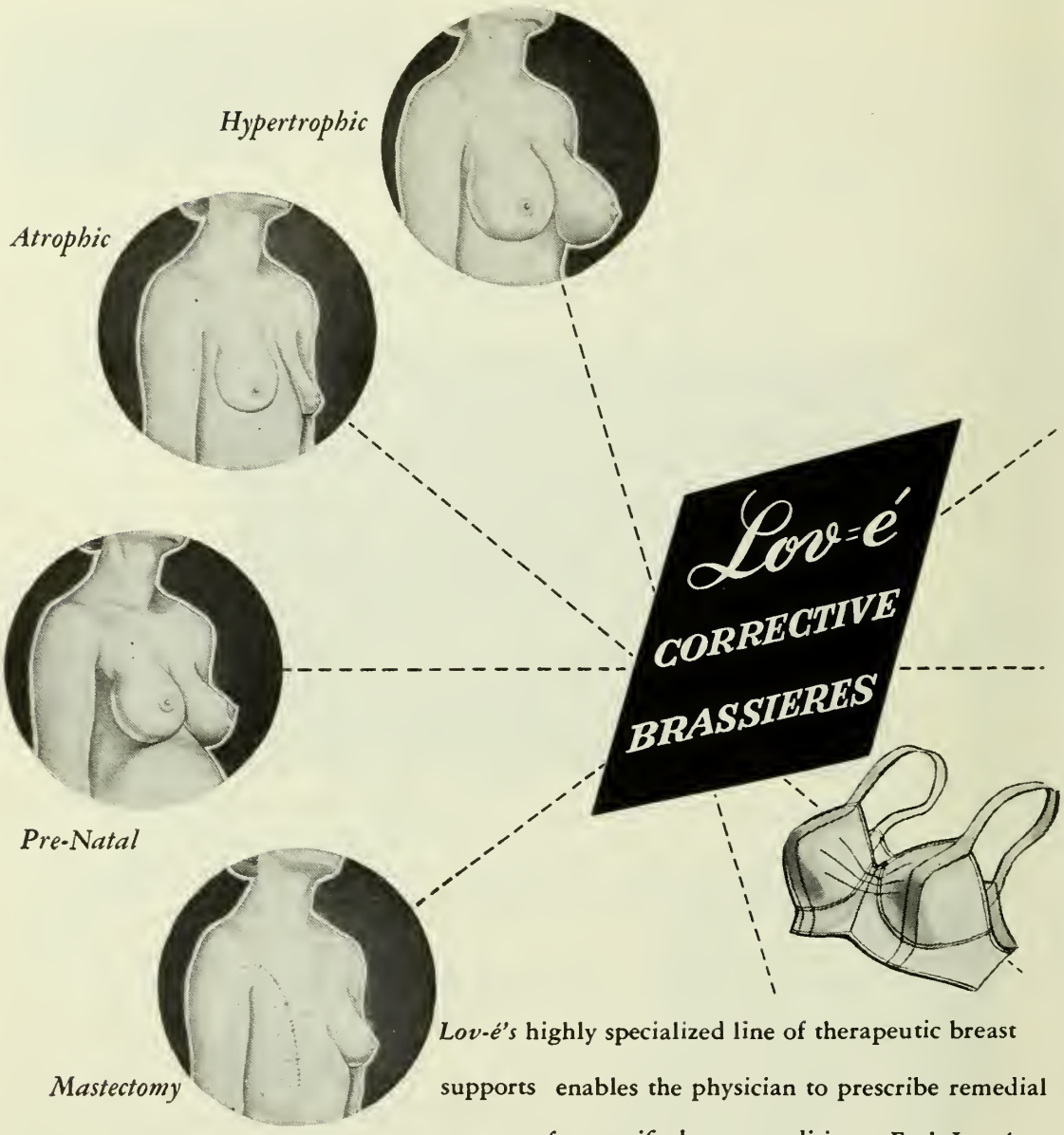
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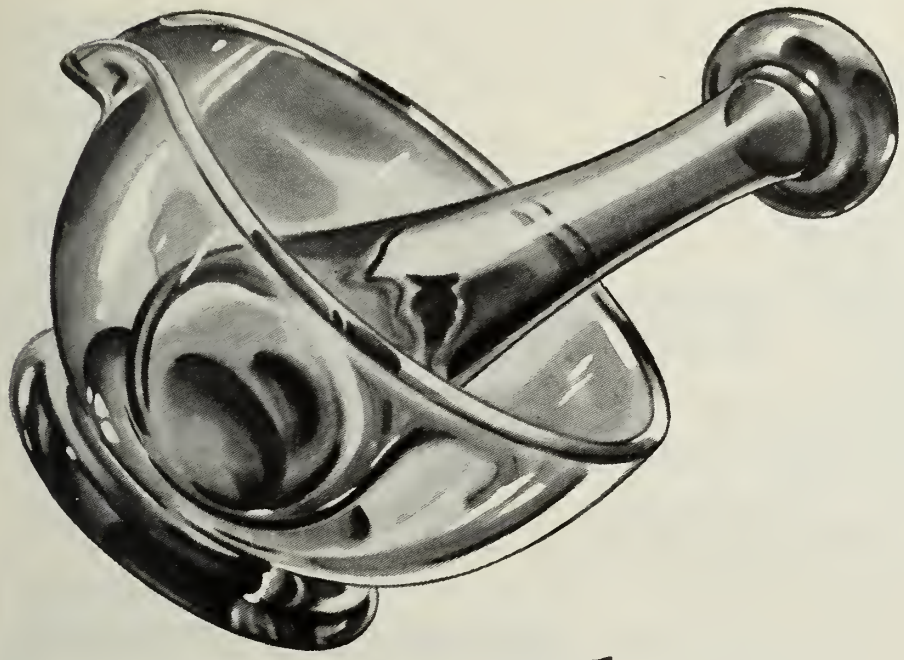
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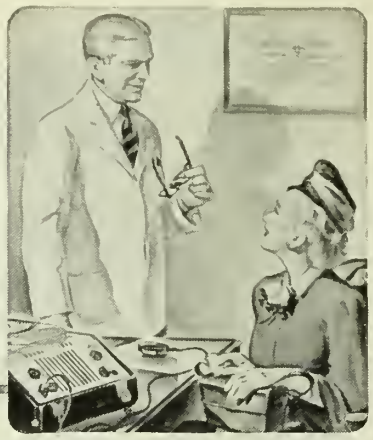
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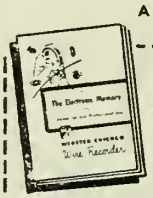
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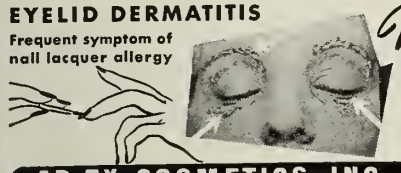
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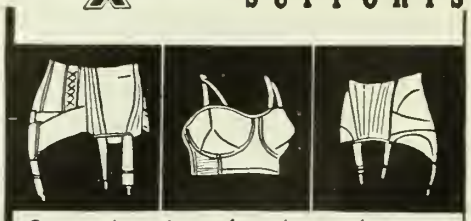
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NUMBER 6

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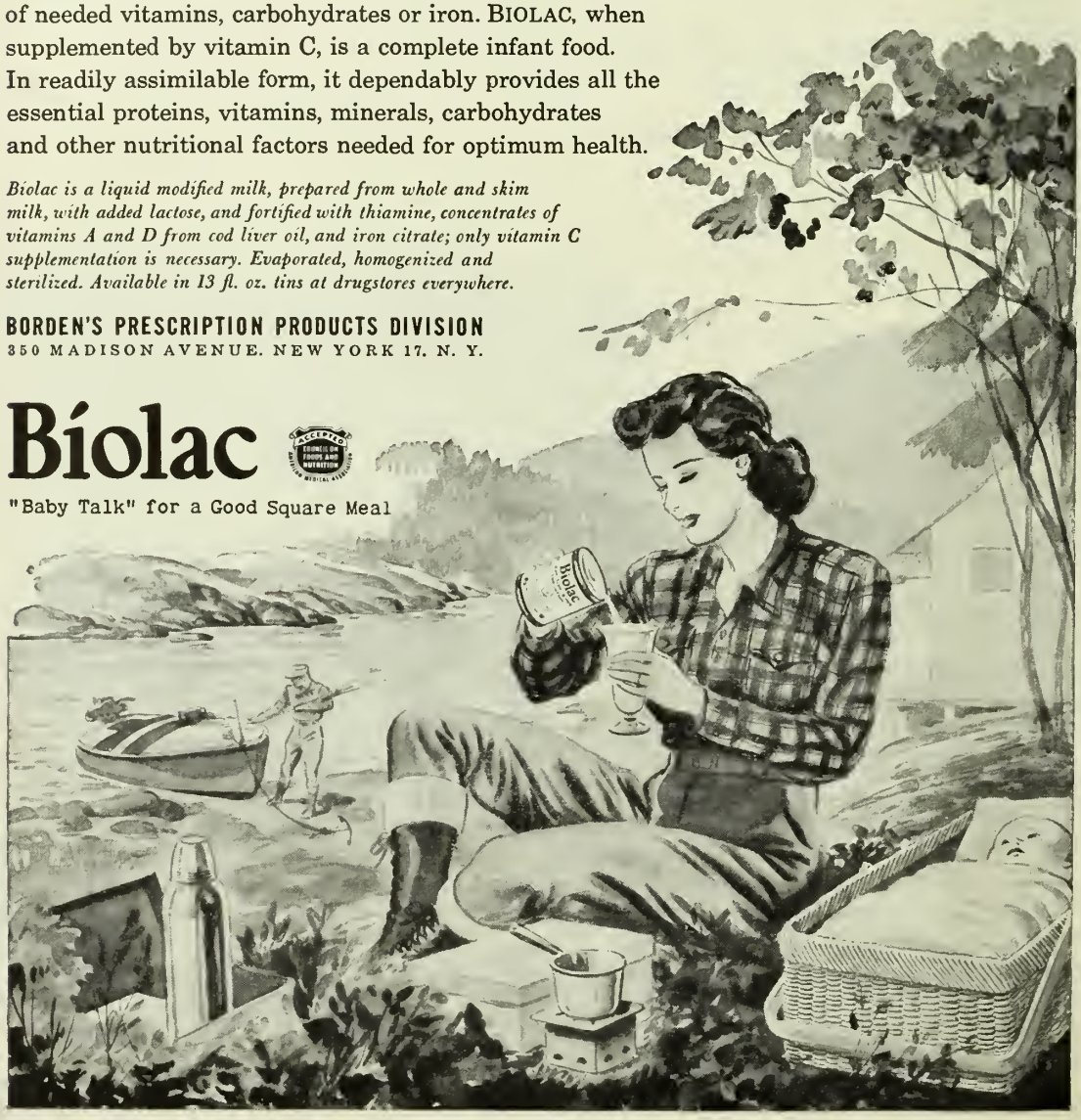
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1. Follis, R. H., Jackson, D., Eliot, M. M., and Park, E. A.: *Am. Jour. Dis. Child.*, 66:1, July, 1943.
2. Stearns, G.: *Jour. Lancet*, 63:344, Nov., 1943.

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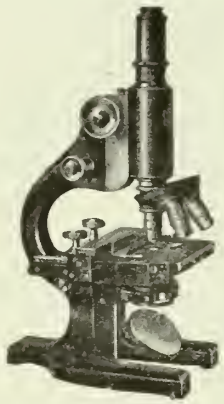
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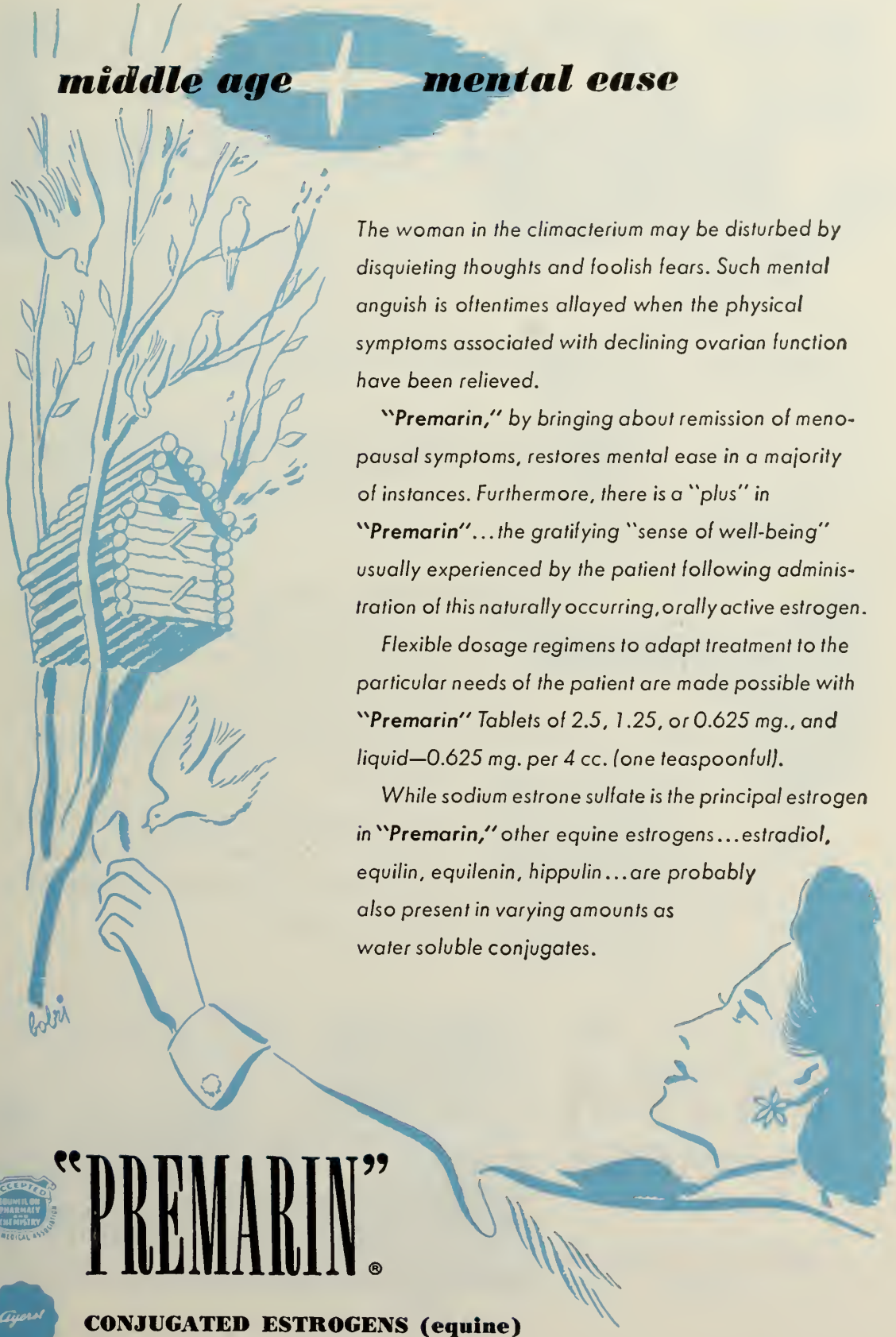
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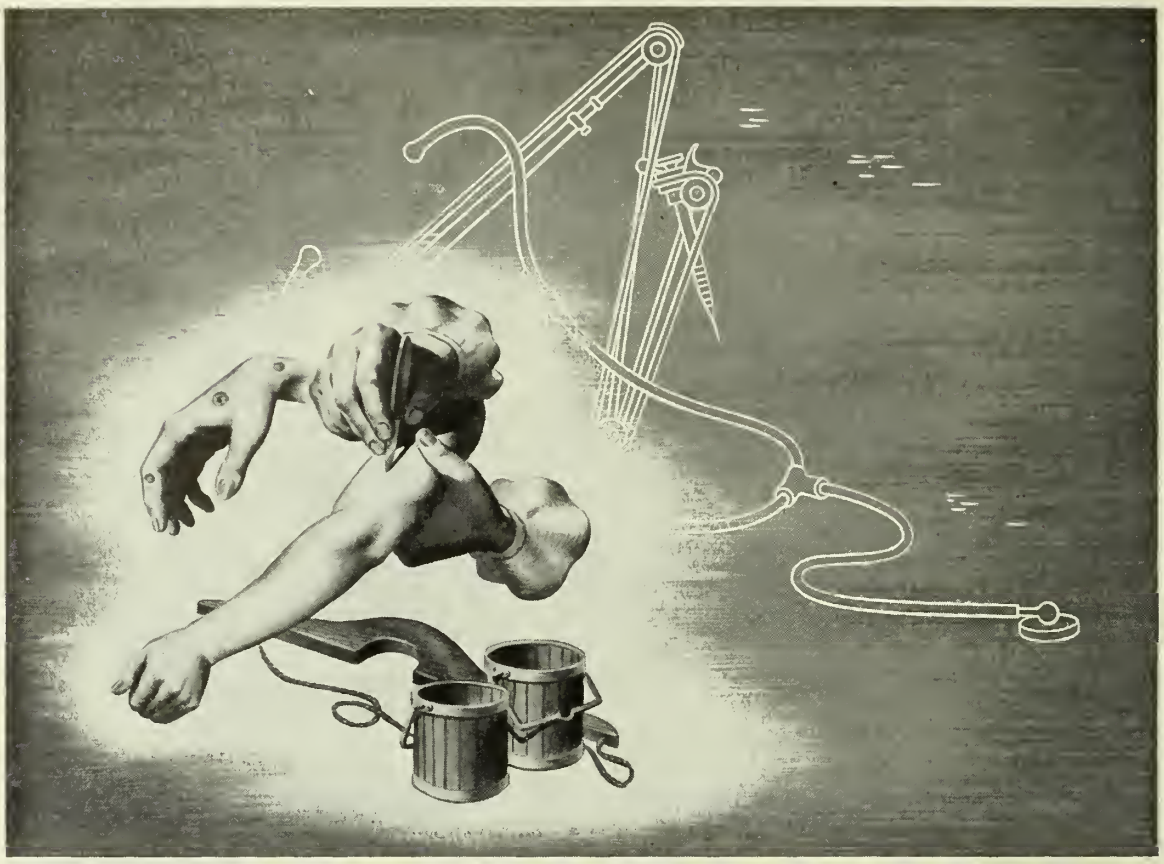
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VOLUME 45 | JUNE, 1948 | NUMBER 6

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PULMONARY HISTOPLASMOSIS

BYRON M. STUART, M.D., *Boonville, Mo.*
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AND
ARIE C. VAN RAVENSWAAY, M.D., *Boonville, Mo.*

RECENT EVIDENCE[1,2] indicates that infections in man due to the Histoplasma capsulatum may occur with much greater frequency than heretofore was believed and may be an important cause of chronic pulmonary parenchymal disease, hilar adenopathy and calcification, or calcification. Since it has been customary to suspect such phenomena of representing tuberculosis, and since histoplasmosis has been considered a highly fatal disease, this concept is of great interest.

In the study of histoplasmosis it is of value to compare the development of present knowledge concerning this infective process with that of coccidioidomycosis because of the many similarities between these two diseases and more complete understanding of the latter condition provides suggestions for the further investigation of histoplasmis. Histoplasmosis ultimately may be found to play a role in the Central United States similar to that of coccidioidomycosis in the arid areas of the West and Southwest. The interrelationship of these two diseases is also of interest because of the migratory tendencies of the American people. Thus cases of coccidioidomycosis are being identified and reported at scattered points throughout the United States[3,4,5,6] and out of the areas of endemicity in which they presumably were acquired. Conversely, instances of histoplasmosis are being recognized in California where they are not believed to occur naturally.[5]

It will be recalled that from the time of the first description of coccicioidal infections in man by Rixford and Gilchrist[7] in 1896 the only recognized manifestation of this disease until recently was the coccidioidal granuloma, a disseminated and highly fatal form of the disease. It was not until 1937 that Gifford and Dickson[8] demonstrated the great frequency of mild and even asymptomatic forms of coccidioidomycosis which actually make up all but a minor fraction of the total incidence.

Similarly, since the first three cases of histoplasmosis in man were reported by Darling[9] in 1906, only the terminal and usually fatal form of the disease was recognized until recently. In their excellent review of the literature published in 1945, Parsons and Zarafonetis[10] report seven cases and review the seventy-one cases in man representing the total in the accessible literature of that time. Only four of this entire group were reported as surviving for any appreciable period. These authors state "infections with histoplasma capsulatum, as far as we know now, is almost universally fatal, death occurring a few weeks or months and rarely years after the infection."

In the short period of three years, however, largely through the efforts of the United States Public Health Service,[2,10,11] a large amount of information has been developed to demonstrate a high incidence of histoplasmin positive, tuberculin negative individuals with calcific pulmonic lesions, thus indicating a widespread and benign form of the disease. This hypothesis is extended further by the report of Furcolow, Mantz and Lewis[1] describing pulmonary infiltrates associated with sensitivity to histoplasmin and with the actual isolation of the organism in one instance. They state, "among Kansas City school children, persistant pulmonary

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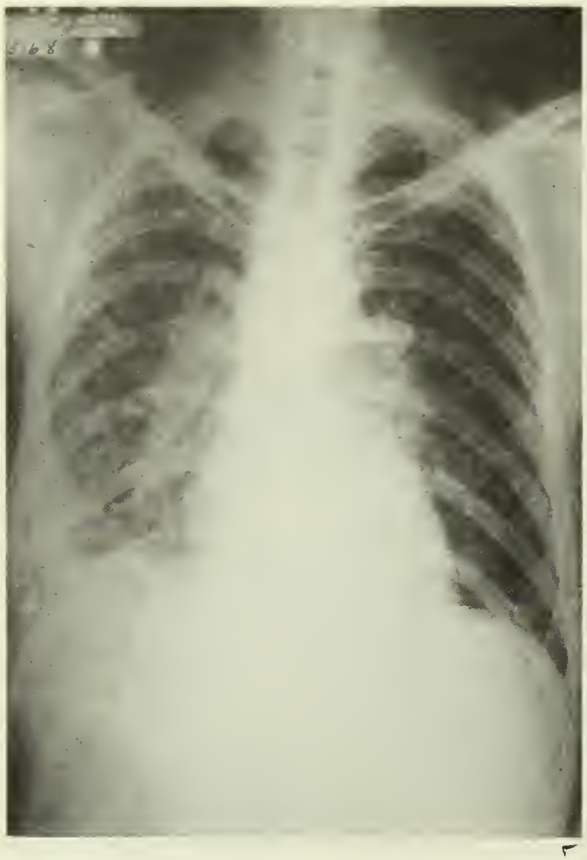


Fig. 1. Case 1. April 21, 1947. Original film showing marked hilar exaggeration with disseminated, ill defined nodulations throughout both lung fields.

infiltrates are associated with histoplasmin sensitivity much more frequently than with tuberculin sensitivity" and further "there is no indication that the asymptomatic histoplasmin sensitive cases (of pulmonary infiltration) require any special treatment." They do not claim that the etiology relationship has been proven in their cases, but the evidence strongly favors this conclusion.

Thus, the outline of a much broader concept of histoplasmosis has been constructed and, again with reference to prior experience with coccidioidomycosis, it is possible to put together a more complete outline of the clinical course of this disease in man than has heretofore been possible. The following paragraphs attempt to do this and undoubtedly will require correction and clarification as experience with this disease becomes more extensive.

The etiologic agent, the Histoplasma capsulatum, is a diphasic fungus assuming a yeast-like form in vivo or upon incubation at 27 C. upon proper media and which assumes a mycelial form upon culture at room temperature. No instances of recognized man to man or animal to man transfer have been recorded and no insect vector has been demonstrated. It therefore is presumed that the mycelial form occurring in nature is the infective form.

The portal of entry in the majority of cases appears to be the lower respiratory tract. However, in many cases in the literature instances are reported in which lesions of the ear, nose, mouth, pharynx, skin and gastrointestinal tract are described. The majority of these cases were of the fatal disseminated form of the disease, and it is not clear whether these lesions represent the primary point of invasion or whether they are a manifestation of dissemination. It appears that in certain cases at least these represent alternate portals of entry. If true, this is in contrast with coccidioidomycosis in which the portal of entry is almost invariably the lower respiratory tract and in which the gastrointestinal tract seems to be primarily immune because of susceptibility of the organism to the digestive juices.

COURSE IN MAN

For purposes of study one may divide the disease in man into two groups, a primary localized and self limiting form and a secondary or disseminating and usually fatal form. The primary form, seldom recognized, often occurs without the development of clinical symptoms. It may be detected by the development of hypersensitivity to histoplasmin in a previously nonsensitive individual with or without the associated appearance of detectable pulmonary lesions, or, possibly, as indicated previously a primary lesion of the skin or mucous membranes. In some instances at least, the onset as determined clinically is explosive with the development of a severe type of lower respiratory tract infection. It is not known, however, to what degree milder cases are associated with clinical symptomatology, i.e., a counterpart of valley fever. It will not be difficult to determine, using the same methodology that was applied to the study of primary coccidioidomycosis[13] to what extent symptoms of a lower respiratory tract infection do occur, whether there is a seasonal cycle in the development of the primary infection and if, in certain instances, there may be associated allergic manifestations such as the erythema nodosum or multiforme and joint symptoms of valley fever. Such a study may provide an etiologic explanation for another segment of the group of acute respiratory tract infections still of unknown etiology.

The pulmonary lesions described by Furvolow, Mantz and Lewis,[1] which probably in the most part represent the primary form of histoplasmosis, were derived from a tuberculosis survey of school children in Kansas City, Missouri, and consisted of pulmonary lesions persisting two months or more in histoplasmin positive, tuberculin negative individuals in whom no other etiology for the process could be found. They describe forty cases in which sharply circumscribed nodular lesions of from 0.5 to 3.5 cm. in diameter were revealed by roentgen ray. There was associated lymph node enlargement in thirty-nine of these cases. The nodules were usually single; only a few cases showed more than five nodules. These nodules frequently had a central calcific area which persisted after the dis-

appearance of the surrounding infiltrate. In seventeen cases a pneumonic infiltration was observed, in fourteen of which there was hilar adenopathy. These varied from small areas of infiltration to lobar involvement or to a patchy pneumonitis involving both lung fields. In some instances these lesions were seen to convert to nodules and at times both pneumonic and nodular lesions were seen in the same case. There were three cases with multiple widely disseminated lesions of various size extending throughout both lung fields. In three cases, varying degrees of hilar or mediastinal lymphadenopathy without parenchymal lesions were demonstrated. In none of these cases was cavitation observed and only in some of the cases with pneumonic infiltration were symptoms present. These soft tissue lesions tended to disappear gradually, in some instances leaving permanent calcific masses and in others clearing completely without residue.

The secondary or disseminated form of histoplasmosis develops in those individuals unable to contain or localize the disease. It is not known what factors determine dissemination although it has been suggested that mucocutaneous lesions are more likely to do so. Disseminated histoplasmosis has been well described by Parsons and Zarafonetis[10] and by Curtis.[12] The skin and mucous membranes (particularly about the mouth and nose, the lymphatic system, lungs, bones and gastrointestinal tract) are commonly involved. The spleen and liver are frequently but not always enlarged. Endocarditis due to the histoplasma has been observed in three cases. The blood picture varies and is not characteristic of the disease. The red blood count ranges from normal to low values and the white count from that of a leukopenia to a moderate leukocytosis. In several cases a reversal of the albumin-globulin reaction has been observed. Of interest, however, are the several cases of perforation of the nasal septum, occurring as a result of lesions involving this structure and at least one of which appears to have healed spontaneously. Further, in eighteen of the cases reported by Parsons and Zarafonetis,[10] lesions of the adrenals were found at autopsy. In eleven of these, caseation necrosis resembling tuberculosis was observed and in three there was a clinical history of marked hypotension.



Fig. 2. Case 1. April 24, 1947. Progressive hilar exaggeration without definite alteration in nodulation. Elevation of the right diaphragm with pleural thickening and a small amount of pleural effusion.



Fig. 3. Case 1. May 17, 1947. Regression in hilar exaggeration with better definition and slight increased density of the parenchymal nodulations.

Epidemiology.—The incubation period of histoplasmosis is unknown (believed to be from eight to twenty-one days in coccidioidomycosis). The endemic areas are not well defined but appear in the United States to consist chiefly of the central states and to exclude the arid areas of the West and Southwest. In order of decreasing frequency cases have been reported from Missouri, Michigan, Ten-



Fig. 4. Case 1. October 10, 1947. Minimal exaggeration of the hilar shadows with diminution in size and greater density of parenchymal nodulations.

nessee, Illinois, Indiana, Alabama and, in lesser numbers, from surrounding states. It also has been observed in Java, Mexico and the Philippines. It is not known if there is a seasonal variation in incidence as has been observed in coccidioidomycosis, the initial infections from which occur with greatest frequency in the dry dusty months. The disease occurs at all ages. The disseminated form occurs chiefly early in childhood and in the latter decades of life. In childhood the incidence is about equal in the two sexes. In university students a slight excess of males over females has been reported for the primary form of the disease. In adults, the disseminated form of the disease occurs four times as frequently in males as in females. It also occurs with increased frequency in dark skinned races, in farmers and in outdoor laborers.

Diagnosis.—In the primary form of the disease at present the diagnosis can be made statistically with some assurance on the basis of otherwise unexplained pulmonic lesions in histoplasmin positive, tuberculin negative individuals. When the lesion is accessible, the phagocytized organism may be recognized in stained smears or tissue sections or recovered by culture. In the individual case the demonstration of the development of hypersensitivity to histoplasmin coincident with the appearance of a compatible lesion is of diagnostic significance. This, however, is seldom possible. The organisms at that stage occasionally may be recovered from sputum, gastric washings, sternal or blood culture or, as in the authors' case, from pleural exudate. With possibly the exception of the latter, none of these procedures will give a high percentage of positive results in the primary form of the disease although they are often successful in disseminated and particularly terminal histoplasmosis. When material containing the organism can be obtained, the interperitoneal injection of mice is a useful method for their demonstration. Precipitin and complement fixation tests, if practicable and if of the same utility as in coccidioidomycosis, would prove of great value in the diagnosis of primary and disseminated histoplasmosis.

Treatment.—There is no treatment of proven value now known or suggested for histoplasmosis. A few cases[10,12] have been treated with evidence of improvement with neostam, an antimony compound, or with a combination of neostibosan (also an antimony compound) and stilbamidine, a diamidine preparation. Other cases treated similarly have not responded. Apparent clinical improvement has in some instances followed the use of sulfonamides while in others no benefit was obtained. In the case reported, prior to diagnosis, penicillin was used in moderate doses and streptomycin in small doses without avail. Sulfomerzine in large doses in combination with iodides was then given over a comparatively long period of time, but there is no way of evaluating the relationship of this treatment to the improvement which occurred.

REPORT OF CASE

Case 1. R. F., aged 24.

Present Complaint.—Nonproductive cough, chills and fever of sudden onset seven days prior to admission.

Family History.—Negative for pulmonary disease, diabetes, allergy or nervous diseases.

Personal History.—No previous serious illnesses or accidents. Periodic joint pains associated with transient stiffness but no objective signs or fever from age 14 to 20 and not recurring after a tonsillectomy at the latter age. During the war he served in the Navy in the South Pacific. During this period he had several mild colds and developed a sinus infection following swimming and stated that he has had a slight nasal discharge since this time. He developed no symptoms of malaria or of any other exotic disease during this period.

Present Illness.—The patient had been entirely well until seven days prior to admission when with a sudden onset he developed chilly sensations, fever, generalized malaise and soreness in the sternal region. An associated cough which was dry at first became productive of a small amount of mucoid material after a few days. There were no upper respiratory tract symptoms. At the onset of this illness, the patient was in college and recalled no contact with wildlife or external parasites.

Physical Examination.—The patient was a cooperative but anxious and orthopneic white male. Temperature was 103 F., respirations 28 and pulse rate 90. The respirations were moderately shallow and labored and the breath sounds were roughened throughout both lung fields. Occasional scattered moist rales were heard without localization. There were no physical findings

of consolidation or fluid. The spleen was soft and palpable 1 cm. below the costal margin.

Laboratory.—Red blood cells were 4.19 million, hemoglobin 13.4 grams, white blood cells 11,100; differential: 1 juvenile, 31 stabs, 22 segments, 25 monocytes, 21 lymphocytes. Urinalysis revealed no abnormalities. Agglutinations for melitensis, abortus, typhoid, paratyphoid A and B were negative. No malarial parasites were found in the blood. A culture of the sputum revealed diphtheroids. A number of blood cultures were nonrevealing. The histoplasmin skin test was strongly positive, whereas a skin test with a 1 to 1,000 dilution of tuberculin was negative.

Course.—Following admission (April 18, 1947) the temperature gradually fell from a plateau of 103 F. to a low point of 99.2 on April 21, 1947. It then began to rise rather rapidly and the patient developed a pleural type of pain on the left and signs of a moderate effusion on the right. He again became quite ill and troublesome dyspnea recurred. His temperature became septic in type with irregularly timed fluctuations from 100.4 to 104.4 F. A diagnostic thoracentesis was performed on April 26, 1947, and 60 cc. of serosanguineous fluid was obtained. He received 300,000 units of penicillin in oil daily from April 19 to May 6. On April 26 sulfamerizine was started and levels of approximately 10 mg. per cent (9.5 to 15.8) were maintained until May 24. The penicillin was discontinued on May 6 and iodides started on May 11. The temperature began to fall by lysis on April 29 and at the time of discharge on May 24 was oscillating irregularly from 98.6 to 100 F. daily. The white blood count fell from the admission level to 3,600 with 60 per cent neutrophils on April 29 and then gradually rose to a normal level. The first recorded sedimentation rate was 65 mm. in 60 seconds (Westergren) on May 10, gradually falling to 15 mm. on May 23. The patient was discharged from the hospital on May 25 to complete bed rest at home. He continued having a low grade fever for three months. He was given limited activity on September 1, 1947, and resumed full activity on January 1, 1948.



Fig. 5. Case 2. Multiple calcified postinflammatory foci observed in a histoplasmia positive, tuberculin negative individual.

The diagnosis in this case was suspected because of the presence of occasional parasitized mononuclear cells. In no instance was more than a single organism revealed within a given cell, which is perhaps explained by the brief interval since the development of the effusion. Confirmation was eventually arrived at from the cultures of the exudate, identification being provided through the help of Dr. Morris Moore of the Barnard Free Skin and Cancer Hospital who reported the yeast like organism obtained to be Histoplasma capsulatum.

REPORT OF CASE

Case 2. J. W., a 66 year old white male was admitted to St. Joseph Hospital on December 17, 1947, because of trauma sustained in a highway accident. An incidental finding was roentgen ray evidence of multiple calcific lesions scattered throughout both lung fields (figure 5). He had been treated in February 1947 for "atypical pneumonia" but there was no prior history of pulmonary disease. An intradermal tuberculin test was negative (1:1,000 dilution) while similar testing for histoplasmin produced a positive reaction at the end of forty-eight hours. While there is no definite proof that the pulmonary lesions in this case are the result of histoplasmosis, it is included as representing the large group of cases of pulmonary calcification for which such a relationship is statistically indicated.

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COMPLICATIONS IN THE TREATMENT OF FRACTURES BY EXTERNAL SKELETAL FIXATION

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The passage of wires or pins through the intact skin and soft tissues and into or through the bone for the purpose of applying mechanical force directly to the bone and thus effecting reduction of a fracture or of maintaining fixation of the fragments until healing occurs is not a new procedure but is one which most orthopedic surgeons have used for many years. However, most of the surgeons who have used external skeletal fixation extensively have learned to use it with discretion because experience has taught them that, while in skilled hands it is effective, the method is fraught with danger.

During the last few years several ingenious mechanical fracture reducing machines or splints have been devised, patented, manufactured and advertised extensively and sold aggressively for profit. The principle of these so-called automatic splints is that each major fragment is transfixed by two or more pins or wires which are fixed in a clamp. These clamps are then fixed in an apparatus which permits the clamp to be moved in various directions and then to be rigidly locked in the desired position. It is thus possible to distract or to impact the fragments or to move them backward and forward or sideways and to bring the ends of the fragments into a satisfactory position and, by locking the apparatus, to maintain this position over a period of weeks or months.

Fixation is maintained by the splint and a certain amount of function of the extremity is possible. This has caused it to be termed the ambulant method of treatment of fractures, ignoring the fact that when treated by more conservative, but less spectacular methods, most fractures, except those of the shaft of the femur and the pelvis, are ambulant during the greater part of the treatment. Well fitting and properly applied plaster of Paris casts permit almost as much function as do the so-called ambulant splints and, in many fractures of the leg, the fragments can be immobilized in a cast which is fitted with a walking iron or foot piece and the patient loses litttle time from his work. The same is even more true of fractures of the upper extremity which are not subjected to weight bearing. The casts have the disadvantage that the joints on either side of the fracture are usually immobilized by the cast. This temporary immobilization of the adjacent joints is rarely a serious handicap to the patient.

In the hands of surgeons who are especially skilled in the use of the external skeletal fixation splints, many fractures can be treated successfully and satisfactorily by the method. But it is to be emphasized that the successful use of this method requires a high degree of skill and close supervision of the patient while the pins are in place if surgical tragedies are to be avoided. The purchase of the recommended apparatus followed by the reading of the pamphlet and the advice offered by the salesman who sells the splint are not enough to enable the average surgeon to use the apparatus safely and satisfactorily and to avoid the complications which have caused the majority of orthopedic surgeons to use external skeletal fixation in only the exceptional cases.

The most frequent of these complications is infection around the pin holes. This infection may vary from pin seepage with a mild infection of the superficial soft tissues to a fulminating osteomyelitis leading to loss of the extremity or even death of the patient from sepsis. There are all gradations between these two extremes. The complication which I have encountered most frequently in old cases of fractures which had been treated by multiple pin fixation is a relatively mild low grade infection in the bone with a sinus extending along the tract formerly traversed by the pin. This sinus may be covered by a scab or may heal temporarily and break open again. The roentgen ray shows one or sometimes two ring sequestra with rarefaction of the adjacent bone (figure 1).

In such a case the infection usually can be cured by excision of the sinus tract and removal of the sequestrum and the infected bone. If the operation is performed while the infection is quiescent the wound can be closed if penicillin in full doses is administered intramuscularly for one day before



Fig. 1. Fracture of both bones of the leg treated by external skeletal fixation. Satisfactory union has been obtained but surgery will be necessary to eliminate infection and sequestration around the pins.

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and about ten days after the operation, or, it may be packed loosely with vaseline gauze and permitted to heal by granulation. If an operation for nonunion or open reduction of the fracture or correction of a deformity is contemplated, the method of primary closure will save considerable time.

If the infection is acute the operation should be for drainage only and the wound should be left open and packed loosely with vaseline gauze and local and general chemotherapy instituted.

The danger of infection varies directly with the number and with the size of the pins used. In other words, a patient with four pins is four times as apt to become infected as is a patient with one pin and large pins are more apt to become infected than are small pins. Yet I have seen a severe and extensive osteomyelitis of the tibia develop from a single Kirschner wire applied under strict aseptic conditions for skeletal traction. This, of course, is an exception, but it does happen.

The danger of infection also is increased by movement of the soft tissues around the pins. It is thus evident that functional use of the part while the pins are in place increases the danger of infection.

I know of no statistics which will give any idea of the frequency of infections around the pins when external skeletal fixation is used by the average surgeon, nor do I know of any method of obtaining reliable statistics on this point. It is possible that an extensive review of a large series of patients in whom external skeletal fixation was used in the Army hospitals will be made and this will give the desired information. Observations made by me while a civilian consultant during World War II indicate that the incidence of infection in such cases was quite high.

The next most important complication of the multiple pin method is delayed or nonunion of the fracture. When fractures are treated by immobilization in casts or splints the tone of the muscles appears to maintain the optimum of pressure on the ends of the fragments and union proceeds in the normal manner. When fractures are treated by traction, care must be taken that the force used is not sufficient to cause distraction of the ends of the fragments; otherwise, delayed or nonunion will result. This is probably due to the fact that when the ends are pulled apart granulation tissue and fibroblasts rapidly fill the space between them and they become separated by a wall of fibrous tissue. This distraction does not have to be great, nor does it have to be maintained for many days in order to interfere with union.

When the distracting force is applied by means of a screw which separates pins fixed in the bones, it is relatively easy to pull the fragments too far apart because the screw is an extremely powerful lever and may exert a force far greater than the surgeon realizes. Davis[1] believes that the frequency of nonunion in fractures treated by external skeletal fixation is due to complete tearing across of the periosteum by the excessive traction used in reducing the fracture. I believe that the chief cause of this complication is the maintenance of the distraction over too long a period and that this permits the formation and growth of soft tissue between the fragments.

Another possible cause of delayed or nonunion is a pressure necrosis of the ends of the fragments. Some surgeons, in order to avoid distraction, reverse the process after the reduction and press the fragments firmly together and during the period of healing tighten up the screws from time to time in order to maintain the pressure. For several years I have used positive pressure on cancellous bone in order to secure union after arthrodesing operations and believe that it promotes union.[2] About fifteen years ago I tried this method in a transverse fracture in the middle third of the shaft of the tibia and the result was nonunion. I have not used it on compact bone in any other case and do not know whether or not the nonunion in that case was due to the positive pressure on the compact bone ends.

A third cause of nonunion is the interposition of soft parts which may interfere with union in fractures treated by external skeletal fixation, just as it may in fractures treated by more conservative methods.

Whatever the cause may be, I have operated upon a sufficient number of patients with delayed and nonunion of fractures which had been treated elsewhere by external skeletal fixation to be firmly convinced that this method of treatment actually may perpetuate the condition which it is designed to correct (figure 2).

A third complication of fractures treated by external skeletal fixation is deformity due to failure of adequate reduction, to or loss of position incident to loosening or premature removal of the pins. The first is due to poor selection of the case for this type of treatment or to lack of skill in the use of the apparatus by the surgeon. Loosening of the pins may be due to infection or to the insertion of the pins in atrophic or cancellous bone which will not stand the strain imposed by the apparatus. Pre-



Fig. 2. Severe infection with loss of position and substance in a compound fracture treated by external skeletal fixation. Removal of pins and of dead bone and correction of deformity preceded this roentgen-ray. There was prolonged disability and several operations were necessary before union was obtained.



Fig. 3. Septic arthritis and osteomye'itis of both hips following septicemia from pin hole infection while the patient was being treated for a simple fracture of the femur. He also developed nonunion of the femur. It is probable that this patient will never walk outdoors again. He has been bedridden for about four years, and has been given many million units of penicillin.

mature removal of the pins may be necessitated by infection or an accident, such as the breaking of a pin, or elected by the surgeon.

A fourth complication of the method is the injury of an important anatomic structure by the pins. The structures apt to be injured are large blood vessels, important nerves and tendons. Such injuries are rare surgical accidents and usually can be avoided by careful choice of the site and direction of each pin before it is inserted. I have seen two instances in which the radial nerve was injured by an external fixation pin and know of one case in which the femoral artery was injured.

A fifth complication of external skeletal fixation is damage to one or more of the joints of the extremity by the pins, or by the prolonged fixation. I have seen damage to the elbow joint, wrist joint and metacarpophalangeal joint of the thumb by pins which were not infected and have seen pyogenic arthritis of the hip joint (figures 3 and 4), knee joint and shoulder joint which followed penetration of the joint by a pin and subsequent infection around the pin. All of these were in different patients.

A sixth complication of external skeletal fixation is acute post-traumatic bone atrophy (Sudeck's atrophy). I now have under my care a patient with satisfactory union of a Colles fracture who has an almost completely useless and painful hand following treatment by external skeletal fixation. It is of course recognized that this condition may occur after treatment by more conservative methods, but it is noted that the so-called functional treatment in this case did not prevent the occurrence of the acute bone atrophy.

Finally there are certain objections to the method which have nothing to do with the patient. The first of these is that the primary reduction of the fracture usually is performed under the fluoroscope and the surgeon who treats many fractures should shun any method which encourages him to use the fluoroscope because, even with modern equipment, the danger of overexposure of the surgeon's hands to the roentgen ray is still with us.

A second objection is that since a surgeon cannot predict what fractures he will be called upon to treat it is advisable that he have constantly on hand the entire assortment of whatever external skeletal fixation apparatus he elects to use. Since the apparatus is left in place until union occurs, this will necessitate the purchase of several splints of each type and size, the number varying directly with the number of fractures treated. Otherwise, when a given fracture is to be treated, the proper splint may still be on the last patient who had a fracture of this type. And I have seen roentgen rays of a fracture immobilized by a splint that had been in place for eighteen months with eight pins holding both bones of the forearm in good alignment, but with the ends pulled apart about a third of an inch, while the surgeon waited for nature to heal the fracture. I was consulted because it was thought that perhaps the time had arrived for operative intervention. I was not permitted to see the patient, but I believe that irreparable damage had occurred.

Not only should several complete sets of apparatus be kept on hand, but extra parts also should be kept in stock because the splints are assembled from several separate pieces and these are easily lost. It is thus evident that the proper use of the method incurs an outlay of capital which is hardly justified by the practice of any but a few surgeons and which the average hospital superintendent will frown upon.

I hope that I have not given the impression that I condemn skeletal traction and external fixation. There is a place for both, and I use both when the occasion arises, but usually as one or two wires or pins for traction or supplemented by a plaster cast for fixation. When the so-called automatic splints first came out some years ago I used the method on three cases. One forearm had nonunion of both bones; another forearm had delayed union of both bones, and the proximal wire broke in the fracture of the leg and then both bones united in



Fig. 4. Bony ankylosis of the knee following fracture of the femur treated by external skeletal fixation. The fracture united in the position shown. The knee was not drained. I do not know whether or not it was infected as this patient was not seen until some months after the pins had been removed.

the normal manner. This was sufficient to convince me that in my hands fractures which could not be treated successfully by conservative methods should be treated by open reduction and internal and external fixation when either or both were indicated, and I believe that open reduction by a competent surgeon under satisfactory conditions is a more sure and a more safe method of treating difficult fractures than is an external skeletal fixation reduction apparatus and splint.

SUMMARY

The ingenious fracture reduction machines and external skeletal fixation splints require considerable skill for their successful use on patients. Also their use is fraught with danger and the following complications have been noted: (1) infection around the pins which may involve the bone and even become extensive or generalized; (2) nonunion which is believed to occur more frequently in fractures treated by this method than in those treated by more conservative methods or even by open operation and internal fixation; (3) failure of satisfactory reduction with resultant deformity; (4) damage to important anatomic structures by the pins; (5) injury to joints, and (6) Sudecks posttraumatic atrophy.

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THE TREATMENT OF ACUTE CHOLECYSTITIS

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FOR MANY YEARS the conservative treatment of acute cholecystitis was accepted by the majority of surgeons. About 1930 there began to appear in the literature articles which advocated surgical intervention early in the attack and cited statistics to show that removal of the acutely inflamed gallbladder was not as hazardous as many supposed and often less dangerous than the serious complications which often arise when the conservative method of treatment is followed.[17, 21, 34, 41]

Those who advocate early surgery compare acute cholecystitis with acute appendicitis. Heuer[21] found the incidence of perforation and gangrene in acute cholecystitis to be 15.7 per cent as compared to an incidence of 17.5 per cent in acute appendicitis during the same period and in the same hospital. In 7,651 cases of acute appendicitis operated upon from July 1921 to July 1935, at Los Angeles County Hospital, Totten[42] found the incidence of perforation to be 13.6 per cent. A compilation of 20,832 cases of acute appendicitis as reported by six authors reveals an average incidence of perforation of 14.8 per cent (table 2). The incidence of perforation in 2,278 cases of acute cholecystitis reported by ten authors was 12.5 per cent (table 1). The universal acceptance of early surgery in acute appendicitis undoubtedly has reduced the incidence of perforations so the comparison is not entirely valid. The mortality rate in 234 gallbladder perforations reported by eight authors was 23.5 per cent (table 1). Frankel, Abramson and Berk[13] found the incidence of gangrene, abscess or perforation in 8,752 cases of acute cholecystitis reported by many authors to be 17.5 per cent.

Table 1. *Incidence of Perforation and Mortality Rate in Acute Cholecystitis.*

Author	*Number Cases*	*Perforations Number*	*Per Cent*	*Deaths*	*Mortality Rate Per Cent*
McNealy (32)	216	14	6.9	6	42.8
Mentzer (33)	51	12	23.5	3	25
Hicken (24)	86	22	25.6	2	9
Kunath (30)	103	23	22	2	9
Graham and Hoefle (18	100	4	4	3	7.5
Koster and Kasman (29)	341	33	9.7	9	27.27
Root and Priestley (36)	127	22	17 3	..	...
Heuer (22)	348	57	16.4	12	21.9
Holtz (25)	547	69	12	18	26.1
B. C. Smith (39)	332	30	9.1	..	...
Totals	2278	286	12.5	55	23.43

Table 2. *Incidence of Perforation in Acute Appendicitis.*

Authors	*Number Cases*	*Number Perforations*	*Percentage Perforations*
Bower (5)	14,904	2,118	13.87
Kirtley and Daniel (29)	1,000	308	30.8
Sperling and Myrick (41)	518	175	34
Collins (10)	3,400	391	11.49
Hawk and Woodhouse (21)	1,010	189	18.72
Totals	20,832	3,181	14.8

Although the majority of perforations of the gallbladder are quickly walled off, localization occurs less often than was formerly believed. Holtz[25] found that only 30 per cent of the sixty-nine perforations in his series were protected. He stated that this is less than the proportion of cases of acute appendicitis which localize and quoted McClure and Altemeier who found localization in 46.43 per cent of their cases of appendicitis with perforation. Sperling and Myrick[40] observed either an abscess or local peritonitis at operation in 61.2 per cent of their cases of perforated appendicitis. Hawk and Woodhouse[20] reported the incidence of diffuse peritonitis to be only 5.3 per cent in their 189 patients who had acute appendicitis with perforation. Of forty-six perforations of the gallbladder reported

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by Sanders,[38] 48 per cent were in the chronic or subsiding stage. Only three acute perforations in his series failed to localized. Johnstone and Ostendorph[27] found that in 57 per cent of the thirty-two deaths due to acute cholecystitis with perforation, localization had occurred. These authors summarized the incidence of free perforation and perforation with localization as reported by ten authors and found 113 free perforations and 152 localized perforations.

Pennoyer admits that gangrene and even perforations may be relatively common but states that in almost 90 per cent of the patients the clinical manifestations will subside, permitting operation to be performed with safety at a later date. In the experience of other authors, the proportion of cases in which the attack subsided under conservative treatment has not been nearly so large. Kunath[30] reported that of ninety patients with acute cholecystitis who were admitted to the University of Iowa Hospital, forty-one were operated upon within twenty-four hours after admission because of a diagnosis of imminent perforation; the remaining forty-nine were treated conservatively. In 35 per cent of the latter group, the attack failed to subside; these were eventually operated upon in an acute phase of the disease with a mortality rate of 12 per cent. Holtz[25] stated that of 316 patients observed in the hospital for eighteen hours or more, the attack subsided in only 12 per cent, was static in 31 per cent and progressed in 57 per cent. Those who favor early surgery obviously will find more indications for abandoning conservative treatment. Frankel, Abramson and Berk[13] reported that the acute stage of the disease subsided in 77.1 per cent of eighty-three patients observed for twenty-four hours or more. In the cases which they surveyed in the literature, the attack subsided spontaneously in an average of 73.5 per cent. Bergh states that it was necessary to perform only five operations for acute cholecystitis in a series of 532 surgically treated patients with nonmalignant disease of the biliary tract at the University of Minnesota Hospital. There were no deaths attributed to the failure of conservative treatment.

The difficulty of determining the extent of the pathologic process in acute cholecystitis is well known. Unfortunately, in many instances the usual criteria give no clue. An elevated temperature, a rapid pulse and a high leukocyte count are often of limited value. Fallis and McClure[11] consider a leukocytosis of 20,000 or above, or a polymorphonuclear proportion approaching 90 per cent, an indication for prompt surgery. B. C. Smith[39] writes that a white cell count of 20,000 or more should suggest complications demanding emergency surgery. Kunath,[30] however, found no correlation between the white count and the pathologic process in the gallbladder. The average leukocyte count in his group of fatalities was only 16,600, and in those patients whose symptoms failed to subside under conservative management, the average count was 15,000. Pennoyer observed that leukocyte counts of 30,000 and more were common in patients whose attacks subsided clinically. The inability of even the most astute clinician to determine the extent of the pathologic process in the gallbladder is regarded by many surgeons as the best argument for early operation in every case of acute cholecystitis.

The ease with which the gallbladder may be dissected out in the early stage of an acute attack, and the large number of cases wherein cultures of the acutely inflamed gallbladder and its contents have been found sterile,[11, 30] are factors which have encouraged early operation. Aronsohn and Andrews[1] found that the injection of bacteria into the gallbladder of experimental animals failed to produce acute cholecystitis, though bile salts set up an active acute inflammation with all the features of acute cholecystitis in the human subject. These authors suggested that acute cholecystitis in man may arise from a qualitative difference in the bile salts excreted by the liver. Wolfer,[44] in 1931, reported a series of experiments wherein he demonstrated pathologic changes in the gallbladder following the introduction of pancreatic juice. Bisgard and Baker[4] produced acute cholecystitis in goats by ligating the common bile duct distal to the pancreatic duct, thus causing stasis and regurgitation of pancreatic secretion into the gallbladder. Womack[45] observed that concentrated bile produced acute inflammation of the gallbladder. Gatch[14] produced acute cholecystitis by introducing solutions of bile salts into the gallbladder, by injecting bile salts into the portal vein and by injecting a solution of activated pancreatic juice into the ampulla of Vater. He concluded that cholecystitis is almost invariably caused by chemical agents which are normal constituents of the body.

Some of the opponents of early operation fear that, if this practice were generally adopted, many wrong diagnoses would be made and many patients would be subjected to useless or even harmful operations. Pennoyer[35] found that the preoperative diagnosis was incorrect in more than one half the patients in his group having emergency operations. Graham[19] observed that the diagnosis was incorrect in 48 per cent of his patients for whom an emergency operation was performed. Of Frankel's patients who were operated upon within forty-eight hours of the onset of the attack, 56 per cent had an incorrect preoperative diagnosis. In all these cases, however, the preoperative diagnosis was some type of acute abdominal disease other than acute cholecystitis. None of the patients who had a preoperative diagnosis of acute cholecystitis was later found to have some other condition, such as coronary thrombosis.

The question often has been confused by failure of the authors to define the terms "immediate," "early" and "late" operation. Surgery performed immediately after the patient's admission to the hospital is often a measure of last resort for desperately ill patients, and this carries a high mor-

Table 3.

Number of cases of acute cholecystitis	75
Number of cases treated surgically	30
Number of cases treated medically	45
Mortality rate in surgical cases (per cent)	10
Mortality rate in medical cases (per cent)	6.12
Incidence of perforation in surgical cases (per cent)	14
Mortality rate in perforations treated surgically (per cent)	25

tality rate; whereas the mortality rate of surgery performed within forty-eight hours of the onset of the disease usually is not materially higher than of that performed for chronic cholecystitis. Summarizing the results of 167 operations carried out within forty-eight hours of the onset, as reported by eight authors, Graham and Hoefle[18] found the average mortality rate to be 3.59 per cent. In their own series of 100 consecutive cholecystectomies for acute cholecystitis, the operation was performed upon fifty-one within forty-eight hours of the onset with a mortality rate of 3.92 per cent; in contrast, the rate rose to 22.72 per cent following operations performed five days or more after the onset. Heuer[22] wrote that in his own series of 153 patients, including forty with gangrene and sixteen with perforation of the gallbladder, the mortality rate was 3.2 per cent following sixty-two early operations in contrast to a rate of 7.2 per cent following late operations.

The fact that such a small proportion of patients with acute cholecystitis reach the surgeon early has been held by some writers as an argument against early operation. The practice of conservative treatment probably explains why so many reach the surgeon late. There is no longer any question about the advisability of prompt surgical consultation in a case of suspected appendicitis as the desirability of early operation is recognized universally. The importance of early hospitalization and surgical consultation in all cases of acute cholecystitis has not been emphasized sufficiently by those who practice the conservative method of treatment. With early hospitalization those patients doomed to a progression of the pathologic process will be much better prepared when surgical treatment becomes imperative.

One of the most effective arguments for conservative treatment is that, during the acute stage, the surgeon must at times compromise on drainage of the gallbladder. Since many of these patients must submit to cholecystectomy later,[8] it is now generally accepted that cholecystostomy should be avoided unless removal of the gallbladder endangers life, particularly in view of the higher death rate following secondary operations. Some authors, however, limit surgery to drainage of the gallbladder in a small proportion of cases. Koster and Kasman[30] performed cholecystectomy upon all of their 341 patients with acute cholecystitis and, in addition, invariably explored the common duct. Their total mortality rate was 9.4 per cent. By excluding those patients with gangrene, perforation and and pancreatitis associated with acute cholecystitis, their mortality rate was reduced to 1.3 per cent. In 111 patients with acute gangrenous cholecystitis the mortality rate was 14.4 per cent, while 27.27 per cent of those with perforation died. Of thirty patients who had cholecystectomy following cholecystostomy, 40 per cent died. Eleven of these were operated upon during an acute attack.

Another argument for conservative treatment is the problem of the common duct stone. Since at least 90 per cent of the patients with acute cholecystitis have gall stones, the incidence of common duct stone should be the same as in chronic cholelithiasis.[11, 46] Glenn believes that the indications for exploration of the common duct are the same in acute as in chronic cholecystitis and, when indicated, exploration always should be carried out. Lahey[31] is of the opinion that, even though the surgeon wishes to avoid opening the common duct in the presence of an acutely inflammed gallbladder, it is one situation which invariably demands exploration; further, exploration may be carried out as well and as safely in the acute as in the chronic case. Gatch,[14] on the other hand, believes the common duct should not be opened if the surrounding tissues are edematous or the head of the pancreas is thickened, as the duct may have been damaged severely by activated pancreatic juice and incision and exploration may cause rupture or occlusion. He prefers to explore the duct at a second operation if indications persist.

Failure to interpret statistics correctly has contributed to the controversy. Only a few of the writers who have presented statistics have tested the validity of their conclusions by the accepted methods to determine whether results are attributable to a certain method of treatment or could have been due to chance. Campbell,[7] in an excellent article on medical statistics, points out the errors in two articles on acute cholecystitis, one advocating early operation and the other delayed surgery, both of which include apparently convincing statistics in support of their respective views. Analysis of the statistics, however, shows that the results of either method of treatment could be due to chance. Factors affecting the mortality rate, such as age, sex and social status,[16] rarely are taken into consideration and, unless the series of cases is unusually large, these factors are important.

I have reviewed seventy-five cases of acute cholecystitis treated on the medical and surgical services in St. Mary's Hospital, Kansas City, Missouri. For obvious reasons, no conclusions will be drawn from this small series, though certain findings are worthy of discussion. Some of the statistics closely parallel those obtained in compilations of large numbers of cases reported in the literature. No uniform policy was observed with respect to the surgical treatment; the majority of surgeons followed a conservative course, although one of the group operated early in a large proportion of his cases.

Thirty of the seventy-five patients were operated upon, with a mortality rate of 10 per cent. There

were twenty-one cholecystectomies with two deaths and eight cholecystostomies with one death. One patient had a large subhepatic abscess. Drainage of the abscess was followed by recovery. Five patients were operated upon within seventy-two hours of the onset of the attack. There was one fatality in this group; the patient had her second cholecystostomy for perforation of the gallbladder. In most of the twenty-two patients who were operated upon seven days or more after the onset, the attack had subsided clinically at the time of operation. Two of the patients in this late group succumbed.

There were three fatalities in the group of forty-five patients who were treated medically. Two died on the day of admission; autopsies were not obtained, though the histories and physical findings were, typical of acute cholecystitis. The third patient died two days after admission; autopsy revealed localized bile peritonitis without demonstrable performation. The mortality rate of 6.12 per cent in this group corresponds closely to that reported by Backhuber, Deeb and Taylor,[2] who found a mortality rate of 5.81 per cent in 895 patients with acute cholecystitis treated on the medical services at the Los Angeles County Hospital.

The incidence of perforation in the thirty patients who were treated surgically was 14 per cent, which approximates the incidence of 14.65 per cent found in a compilation of 2,278 cases reported by the authors listed in table 1. The mortality rate of 25 per cent approaches the rate of 28.75 per cent in 234 perforations reported by eight authors (table 1).

The unreliability of laboratory procedures and temperature in the interpretation of the extent of the pathologic process in the gallbladder has been discussed previously. In this series of seventy-five patients, twelve had temperatures of 102 F. and above, and leukocyte counts of 15,000 and more. Only two of these patients were operated upon; one died on the seventh postoperative day following removal of a perforated gallbladder and the other recovered after cholecystectomy was performed thirteen days after the onset and her symptoms had subsided. One patient who was treated medically died on the day of admission and autopsy was not obtained. The clinical manifestations in the remaining nine promptly subsided and no operation was performed.

Eight patients had temperatures of 103 F. and above. The clinical manifestations in four patients subsided rather rapidly under medical treatment and they were discharged without operation. One patient died without being operated upon. A second patient recovered without incident following removal of an acutely inflamed gallbladder. A third had a cholecystectomy twelve days after admission, all acute symptoms having subsided. A fourth patient had a large subhepatic abscess drained seventeen days after admission.

While the four patients with perforation of the gallbladder had leukocyte counts of 15,000 or more, there were seven with leukocyte counts of 20,000 and over whose symptoms subsided rapidly under conservative treatment. Only one of the four with gangrenous cholecystitis had a white count of more than 15,000. Only two of the thirteen patients with gangrene, empyema or perforation of the gallbladder had a preoperative temperature of more than 102 F. and only five of this group had leukocyte counts of 15,000 or more.

Although this series of cases is too limited to permit any conclusions to be drawn, it is found that the proportion of perforated gallbladders and the mortality rate for the patients with perforation as well as for the entire group is approximately the same as that found in a collection of a large number of cases reported by many authors. Further, in accord with the reports of most of those who have contributed to the literature on the subject, it has been shown that the leukocyte count and the temperature cannot be used to determine authoritatively the pathologic condition of the gallbladder or as indications of the course of the disease.

The controversy between those who teach that early operation in all cases of acute cholecystitis would lower the mortality rate as similar treatment has lowered it in acute appendicitis, and those who still believe the best results will be obtained by strict adherence to a conservative policy is likely to continue for some time. Meanwhile, many surgeons gradually are modifying the strictly conservative plan and are becoming more inclined to operate upon patients who do not exhibit prompt improvement after a short period of treatment with intravenous fluids, transfusions and other conservative measures. In 1936, Zollinger[5] reported a series of 235 cases wherein conservative methods were employed. Until that time, he had advocated a conservative policy; when this study revealed a mortality rate of 10.7 per cent, he decided to modify his course and operate upon all patients who failed to present signs of definite improvement after from eighteen to twenty-four hours of conservative treatment. In 1940, he reported that, in a group of 121 patients, the mortality rate had been reduced to 3.8 per cent, a difference of 6.9 per cent. This difference is more than twice its standard error and therefore unlikely to be due to chance.[7] Whipple wrote that he was convinced his mortality rate would be lower if he were to operate earlier than had been his custom in the past.

In carefully selected cases prompt removal of the acutely inflamed gallbladder can save the patient many days of hospitalization and eliminate the danger of perforation; at the same time the patient will not be subjected to any greater hazards than if surgery were postponed until after the acute phase had subsided. The increased incidence of liver damage, hypertension and heart disease in patients with cholecystitis,[16] however, demands a careful selection of the patient and the time for intervention. Although cholecystostomy may be

easily and often safely performed, even by the occasional operator, it should be reserved for gravely ill patients whose tissues are so extensively involved in the disease process that visualization of the cystic and common ducts is difficult. In view of the late results of cholecystostomy and the high mortality rate of secondary operations, this procedure is inadvisable except as a life-saving measure.

CONCLUSIONS

1. The incidence of perforation in acute cholecystitis approaches that in acute appendicitis.

2. The mortality rate following operations for perforation of the gallbladder is almost 25 per cent.

3. Neither the proponents of early operation nor those who advocate a conservative course have reported statistics which show conclusively any superior advantages of either method of treatment.

4. Early hospitalization, careful observation, thorough preparation and surgical intervention if recovery is not prompt, is the procedure of choice.

5. If general and local conditions warrant, cholecystectomy is preferable to cholecystostomy.

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PENICILLIN USED TO TREAT INFECTION AFTER LION ATTACK

Complete and rapid recovery, through the use of penicillin, of an African hunter who was wounded by a wild lion is reported in the May 1 issue of *The Journal of the American Medical Association*. The report, made by Alexander Hershman Kemp, M.D., head of a mission hospital in West Central Africa, is the first on the use on penicillin following the mauling of a person by a carnivorous animal.

According to the article, infection always follows wounds inflicted by wild animals since their teeth and claws are contaminated with various types of bacteria. Gangrene and cellulitis are two common, and frequently fatal, results of such wounds.

The usual treatment accorded puncture wounds of this type, Dr. Kemp states, is to open them to permit drainage, providing the condition of the patient is not too critical. Instead of following this procedure, however, Dr. Kemp injected 1,500,000 units of penicillin in oil and beeswax, administered daily in doses of 300,000 units each.

SUPERNUMERARY KIDNEY WITH ECTOPIC URETERAL ORIFICE

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AND
WILLARD C. SCRIVNER, M.D., *St. Louis*

Although supernumerary kidney with ectopic ureteral orifice is a comparatively rare finding, it occurs with sufficient frequency to warrant a brief discussion with a report of two additional cases. In 1938, Eisendrath reported a total of 255 cases from a complete review of the literature. The majority of these cases occurred in females. Scott, in 1944, and Bacon, in 1946, estimated that there were approximately 300 cases on record. However, since a great many cases undoubtedly go unreported, it is believed that this condition occurs more often than one would suppose from a review of the literature.

The predominant symptom is lifelong incontinence associated with normal voiding. Neurogenic bladder must be ruled out, but the symptom complex is so different that this differentiation presents little difficulty. Frequently, there is a stenosis at the ectopic orifice resulting in a secondary hydroureter and hydronephrosis. Under these circumstances, renal colic or repeated attacks of urinary infection may be present. As a rule, there is no involvement of the normal portion of the urinary tract. Diagnosis is confirmed by discovery of the ectopic orifice, which almost always can be accomplished if its presence is suspected and a careful search made. Observation should be begun at the cervix with examination of all of the vaginal fornices, working outward with particular emphasis on the area about the external urinary meatus. The examination is particularly difficult in children and the diagnosis may have to be made from the history and a study of intravenous urograms. Scott has stated that he has found no case in which a ureter with an extravesical orifice drained the lower segments of a double pelvis. Therefore, in studying urograms one should search for absent upper minor calices on the involved side. Intravenous indigo carmine is of doubtful value because the concentration of the dye from the supernumerary portion is so poor that it adds little to the visualization of the orifice. Once the orifice has been located, it is usually a relatively simple matter to catheterize the ureter, using a No. 4 or No. 5 ureteral catheter, which then may be injected with opaque media and the entire lesion visualized. These findings should be supplemented by intravenous or retrograde urography, thereby ascertaining the condition of the rest of the urinary tract.

The treatment of choice is partial nephrectomy. If a hydro-ureter exists, as much of the ureter as possible should be excised at the time of the nephrectomy. Since the lower portion of the ureteral segment will atrophy following removal of the secreting portion of the kidney, it is not felt that a total ureterectomy is necessary in most cases.

Two cases are reported.

From the Department of Surgery, Washington University School of Medicine and Barnes Hospital, St. Louis, Missouri.

CASE REPORTS

Case 1. This was an 18 year old white female. Significant in her past history was an uncomplicated appendectomy at the age of 7. One wonders if the appendix was not removed for ureteral colic. Urinary incontinence with normal voiding had been present all of her life. Although this young woman was of normal intelligence, she did not present the usual concern about her condition and it was not until she went to live with her sister, who objected to the continuous odor which was present, that medical advice was sought. Careful examination revealed a small opening located on the cervix about one and a half cm. from the cervical os. Clear urine could be seen passing from this opening. A No. 4 catheter was passed through the orifice for a distance of approximately 5 cm., and injected with 40 cc. of hippuran. Pyelograms were made and the results are shown in figure 1. A large hydroureter is noted, draining a single upper calyx on the right side. Intravenous urograms showed a normal upper tract except for an absent upper minor calyx on the affected side (fig. 1). A single calyx in the supernumerary kidney was visualized. Operation was performed, using the kidney incision described by Hess, with removal of the twelfth rib. This incision is particularly applicable to this type of case in which one invariably is dealing with a lesion at the upper pole of the kidney. Exposure of the supernumerary portion of the kidney was easy and its blood supply was isolated readily and ligated. Removal was accomplished without entering the calyceal system of the lower portion of the kidney. As much of the ureter was removed as could be reached through the kidney incision, the dissection being carried down almost to the level of the bladder. The lower end of the stump was ligated and a drain placed

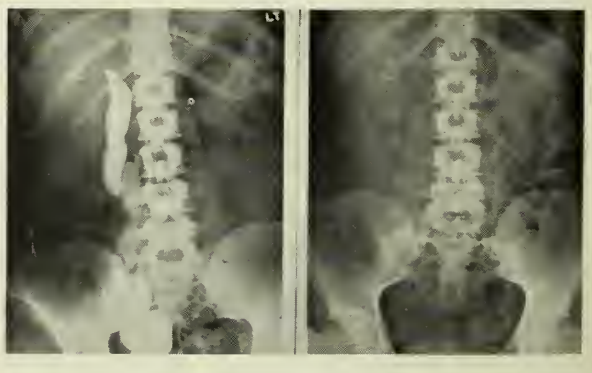


Fig. 1. Injected ectopic orifice showing marked ureteral dilatation. Intravenous urograms show normal structure of upper tract except for absent upper minor calices on the right.



"... a considerable reservoir of unsuspected and unreported amebiasis has been brought back to the United States...."[1]

Urging clinicians and roentgenologists to be on the alert for signs of this disease, Wilbur and Camp[2] note the frequency with which the radiologist finds unsuspected lesions, ultimately diagnosed as amebiasis.

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1. *Editorial: The Problem of Amebiasis, J.A.M.A.* 134:*1095* (*July 26*) *1947.*
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Fig. 2. Ectopic ureter draining upper supernumerary kidney. Intravenous urogram showing normal upper urinary tract structure except for absent upper minor calyx on the right.

down to that area. Postoperative convalescence was uneventful and the patient has made a satisfactory recovery.

Case 2. This was a 30 year old white female who had had urinary dribbling all of her life accompanied by normal voiding. She had consulted many physicians and received many types of treatment without avail. This patient was definitely sensitive about her condition and showed marked psychoneurotic tendencies. There were no other symptoms referable to the urinary tract and there was no history suggestive of previous urinary tract infection. Careful examination revealed an orifice located just outside the urinary meatus from which clear urine could be seen to drip. Following passage of a No. 5 catheter up the ureter for a distance of 26 cm., a pyelogram was made (fig. 2). Pyelogram showed a relatively normal ureter draining a single upper minor calyx. Intravenous urograms showed definite function in the supernumerary portion of the kidney, with a normal renal pelvis below except for an absent upper minor calyx on that side (fig. 2). Surgical procedure was exactly as described in the previous case except that it was not necessary to excise any great portion of the ureter. The Hess kidney incision was used. Blood supply to the supernumerary portion was isolated easily and ligated, making the operation practically a bloodless one. It was not necessary to open the calyceal system of the lower portion of the kidney. Convalescence was uneventful. Practically all of her psychoneurotic symptoms have disappeared and she is an extremely grateful patient.

CONCLUSION

Ectopic supernumerary kidney with ectopic ureteral orifice occurs more frequently than is supposed. Its presence always should be suspected with the history of lifelong urinary incontinence accompanied by normal voiding. A careful search usually will reveal the orifice and, once located, it is a relatively easy matter to insert a ureteral catheter and visualize both ureter and kidney pelvis. Intravenous urograms should be used routinely for ascertaining the condition of the remainder of the urinary tract and as an aid to positive diagnosis in children. The operation of choice is partial nephrectomy. The kidney incision described by Hess is particularly applicable to this type of lesion, which always involves the upper pole.

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POSSIBLE SOURCES OF POLIO ANALYZED IN JOURNAL ARTICLE

Attempts to isolate the poliomyelitis virus from various extra-human sources in epidemic areas formed the basis of an intensive study of 15,300 individual living specimens by three Michigan investigators, who report their results in the April 24 issue of *The Journal of the American Medical Association.*

The investigators, all from the Department of Epidemiology and Virus Laboratory, School of Public Health, University of Michigan, are Thomas Francis Jr., M.D., Gordon C. Brown, Sc.D., and Lawrence R. Penner, Ph.D. Their investigation was aided by a grant from the National Foundation for Infantile Paralysis.

According to the report, "the best evidence of the transmission of poliomyelitis at the present time supports a person to person transfer."

However, the authors caution, "one may not forget that the evidence was arrived at through processes of elimination rather than by scientifically approved experiments."

Stating that outbreaks of the disease are correlated with seasonal influences such as temperature, rainfall and the prevalence of animals and insects, the authors add that "it is difficult, if not impossible, in determining the transmission of poliomyelitis, to rule out extra-human factors completely."

Their five year study, in attempting to evaluate possible sources of the poliomyelitis virus, represents attempts to isolate the virus from various materials, research into serums in the hope of detecting antibodies for the virus in animals, and laboratory experiments with insects.

The specimens tested included 33 wild mice, 112 wild rats, three muskrats, four cats, one horse, chickens, hogs, and 43 pools of insects, 38 of which were flies. In addition, 24 samples of sewage, two of sludge, one of soil, 10 of water and three of milk were examined.

These specimens were collected during the poliomyelitis epidemics and usually from areas near the patients afflicted with the disease.

Forty-six wild rats from epidemic areas of Buffalo and Detroit after being examined to determine if they harbored the polio virus, were then tested for neutralizing antibodies. The serum of only one of these rats showed such a virus neutralizing capacity.

A mouse-paralyzing agent, which has not yet been identified, was isolated from a pool of wild rats caught in Fort Worth, Texas.

Speaking of the attempts to isolate the actual poliomyelitis virus in extra-human sources, the investigators state that "the possibility that some insect plays a role in the transmission of poliomyelitis remains the most likely of all the extra-human propects."

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FALSE POSITIVE SEROLOGIC TESTS FOR SYPHILIS

HERBERT L. JOSEPH, M.D., *St. Louis*

The problem of the false positive serologic report for syphilis is becoming increasingly apparent. Confusion has resulted from the growing volume of literature on this important subject and it is felt that a résumé is in order. The mass testing of individuals premaritally and prenatally, by entire states or cities in some instances; the experience with thousands of blood specimens from selectees, members of the armed forces, veterans and blood donors; as well as continuous investigative studies and reports, have increased knowledge of the incidence and seriousness of the false positive serologic test. My purpose here is to summarize and clarify the subject for the physician not primarily engaged in the practice of syphilology.

The social and psychologic tragedy created by the diagnosis of syphilis when the patient does not have the disease is to be avoided by all means. The diagnosis should never be made on the basis of a single positive report. Moore[1] has stated that it is as undesirable to make the diagnosis of syphilis in a patient who does not have the disease as to miss the diagnosis in a syphilitic person.

The immense value of the serologic tests as diagnostic aids and treatment guides in syphilitic patients is not to be denied. When correlated with the history, physical findings and other laboratory studies (to be discussed later), they are highly specific. Yet the false positive continues to be reported. To date there is no simple and dependable procedure for differentiating syphilitic from nonsyphilitic positively reacting sera; however, in many cases a differential diagnosis can be made.

REAGIN, ANTIGENS AND SEROLOGIC REACTIONS

Reagin is that substance in serum which reacts with antigen under certain conditions to give positive complement fixation or flocculation reactions for syphilis. Its exact nature is not understood and its immunologic significance has not been realized fully. It is present in sera of many lower animals and may be increased in human serum in many conditions other than syphilis. Reagin is thought to be a part of the gamma globulin fraction of the serum.[2, 3, 4]

The original Wassermann antigen was prepared from human syphilitic tissue and therefore was believed to be specific. It was discovered shortly, however, that antigens prepared from normal mammalian tissue would suffice. Standard antigens, as commonly used today, are alcohol-soluble lipoids of beef heart. Thus, antigens and the serologic reactions are biologically nonspecific.

The newer cardiolipin-lecithin antigen is believed to be a more purified form of true antigen. It is more easily standardized and is a more uniform product than standard antigens. Although it is more sensitive, it appears to give fewer false positive reactions; however, false positive reactions occur with cardiolipin-lecithin antigen in many conditions.[5, 6, 7, 8, 9, 10] A high incidence of false seropositivity is obtained with spirochetal antigens prepared from T. pallidum which, at first glance, would be thought to give specific reactions.[11]

The sensitivity of antigens can be adjusted by the serologist so that all nonsyphilitic sera will give positive reactions.[12] Sensitivity, in general, is in inverse proportion to specificity and the balance is quite fine. The complement fixation tests are more specific and less sensitive, while the reverse holds true for flocculation or precipitation tests. The Committee on the Evaluation of Serological Tests for Syphilis has stated that any test yielding as much as 1 per cent false positive reactions should be modified to increase specificity even at the sacrifice of sensitivity.[13] This indeed indicates the high practical specificity of standard tests.

The following cardinal points are generally true in regard to false positive sera and should be kept in mind in their differentiation:[14]

1. They occur more frequently with flocculation than with complement fixation type tests.
2. They are usually, but not always, of low titer or weakly positive.
3. They are of short duration, ordinarily reversing to negative within three months.
4. Conflicting or discordant results occur commonly with the different tests and on different occasions.

TYPES OF FALSE POSITIVE REACTIONS

False positive reactions fall into three classes:

I. *Technical False Positives.*—These are due to faulty handling, defective materials or errors in laboratory technic. The incidence of technical false positives is in direct relationship to the skill and experiences of those conducting the tests.[15]

II. *Primary Biologic False Positive Reactions.*—These occur in apparently normal persons with no evident cause. In specimens from 82,070 basic trainees, Wolman[16] found 778 (0.95 per cent) with positive Kahn reactions. Subsequent studies of the positive reactors, including checking against a battery of seven other tests, revealed that four of five strongly positive reactions occurred in syphilitic individuals, whereas four of five weakly positive reactions occurred in persons who did not have syphilis.

Eagle,[17] in the examination of 40,545 apparently normal college students, after statistical correction, found one false positive to every 4,000 tests.

Studies, observations and reports from the Dermatologic Department of the Barnard Free Skin and Cancer Hospital, and the Washington University School of Medicine, Service of Richard S. Weiss, M.D.

Without correction, the ratio was 1:1125. Sherwood, Bond and Canuteson[18] reported a ratio of 1:1017 in apparently normal persons. Thus, reagin may be present in normal as well as syphilitic sera, the difference primarily being one of quantity.[19] In a study of 210,261 Red Cross blood donors, Stokes selected ninety-eight with suspected false positives, of whom only 40 per cent were diagnosed finally as having syphilis, the remainder being classified as false reactors.[14] Shaffer found 43 per cent false positives among military separatees who had positive serologies on separation.[20]

III. *Secondary Biologic False Positive Reactions.*—This term designates positive reactions occurring secondary to a disease or condition other than syphilis. In the Danish State Serum Institute, where all serologic tests for syphilis in Denmark are performed, fifty-three strongly positive secondary nonspecific reactions were found out of 157,500 specimens.[21]

The following is a list of conditions in which nonspecific reactions have occurred. It is compiled from Stokes[21] and the current literature, with modifications. A discussion of the more important conditions as they occur in the United States is given following the tables. In the tropics, other conditions obviously assume more important roles.

Table 1. *Conditions with Relatively High Incidence of False Positive Reactions, in Order of Relative Importance.*

1. Vaccinia
2. Infectious mononucleosis
3. Malaria
4. Leprosy
5. Hyperproteinemia
6. Rat-bite fever
7. Yaws
8. Pinta
9. Bejel
10. Relapsing fever
11. Kala-azar
12. Cutaneous leishmaniasis

In vaccinia, the incidence of false positives varies greatly in the several series reported. In each series of patients studied, the incidence depends upon the number of patients, time of taking blood specimens after vaccination and the sensitivity of the serologic tests used. In the larger series, the incidence varies from 0.26 per cent to as high as 44.9 per cent.[22, 23] In most studies, however, the average incidence approximates 15 per cent. There are appreciably more false positives among those with vaccinia type "takes." The incubation period for the development of seropositivity following vaccination is usually from eight to fourteen days and the sera rarely remain positive longer than four months.[24, 25, 26, 27]

False positives occur in infectious mononucleosis in about 18 to 20 per cent of the cases. Contrary to the general rule, the reactions occur more frequently with the complement fixation tests in this disease and usually are negative in three months.[28, 29, 30]

Nonspecific seropositivity in malaria patients has become a serious problem in veterans. In this disease, as in infectious mononucleosis, false positives often occur with the complement fixation tests, and the reactions are frequently strongly positive. There are often anticomplementary reactions. Probably 100 per cent of all patients with acute malaria having positive blood smears for plasmodia have a positive serology at some time during this phase of the disease. In the larger series reported, the incidence varies from 22 per cent to 100 per cent. The incubation period for the development of false seropositivity is believed to be from four to seven days following the first malarial paroxysm, with the greatest incidence from fifteen to twenty days after a paroxysm. Most reactions reverse to negative within four weeks.[22, 31, 32, 33, 34, 35]

More than 50 per cent of lepers have a positive serologic reaction for syphilis, and changes in the disease often are accompanied by changes in the serology. The diagnosis frequently is mistaken for syphilis, as reflected in the fact that more than one third of the patients entering the National Leprosarium had received antisyphilitic treatment prior to admission.[36, 37]

The incidence of false seropositivity in a small series of patients with hyperproteinemia associated with a variety of pathologic conditions has been reported as 23.5 per cent. It was noted that an increase in total serum protein, serum globulin, or both, often resulted in positive or anticomplementary reactions. Since reagin is a part of serum globulin, this is not surprising. Further studies of this problem should prove interesting.[38]

As shown in table 1, there is a high incidence of false seropositivity in certain spirochetal tropical diseases. These may be encountered in veterans.

Table 2. *Conditions with Relatively Low Incidence of False Positive Reactions, in Order of Importance.*

1. Respiratory infections
2. Tuberculosis
3. Blood donation
4. Carcinoma of the cervix
5. Drugs, especially ether anesthesia, narcotics, alcohol and paraldehyde
6. Lupus erythematosus
7. Jaundice
8. Rocky Mountain spotted fever
9. Weil's disease
10. Typhus fever
11. Trypanosomiasis
12. Lymphogranuloma venereum (?)

False positives are found infrequently in respiratory diseases; however, their occurrence has been well established and is important because of the frequency of these diseases such as pneumonia, tuberculosis and the upper respiratory infections. Eldh[39] found fifty-two nonspecific reactions in 20,798 nonsurgical patients, twenty-six of whom had respiratory diseases. In the Danish series referred to previously,[21] with fifty-three false reactions in 157,500 specimens, thirty were from patients with respiratory diseases. Stokes[19] gives an incidence of from 2.3 to 8.9 per cent of false positives occurring with "fever."

In children, of whom eighty-two (1.4 per cent) of 5,625 gave false positive reactions, fifty-one had upper respiratory infections. Of these fifty-one, forty were febrile and eleven afebrile.[40] In another series there were 242 (0.9 per cent) nonspecific reactions

in 26,700 specimens from children.[41] Thus, it would appear that false positives occur more frequently in children than in adults, particularly in those with respiratory disease.

In reference to children, it is apropos to insert a word about making the diagnosis of prenatal syphilis on the basis of the umbilical cord blood serology. Congenital syphilis of the newborn should never be diagnosed on the basis of the cord serology alone as the reagin titer will correspond with that of the mother. Thorough clinical and long bone roentgen-ray examinations should be done and serial quantitative serologic studies taken at weekly or biweekly intervals after birth. A positive cord serology alone, false or otherwise, does not necessarily mean that the infant has congenital syphilis.

There is disagreement as to the incidence of false positives in donors following the donation of blood. It has been reported as occurring in 10 per cent of 300 donors; however, most authors give a much lower figure, generally less than 1 per cent. The incidence apparently increases after repeated donations.[14, 42]

Tuberculosis, malignancy, ether anesthesia, jaundice and pregnancy are conditions in which false positives formerly were believed to occur rather frequently, but in which nonspecific reactions probably occur rarely under the proper modern technical conditions.[43, 44, 45, 46, 47] In the literature false positives have been reported as occurring in more than fifty other conditions.

False positive Wassermann reactions in the spinal fluid occur with relatively less frequency than in the blood serum. They have been reported in a few cases of meningitis and in several other intracranial conditions and usually are accompanied by other abnormal findings in the spinal fluid.[48, 49]

PROCEDURES IN THE DIFFERENTIATION OF FALSE FROM TRUE POSITIVE SEROLOGIC REACTIONS

When a false positive serologic reaction is suspected, the following steps should be taken to determine whether or not the patient has syphilis:

1. *History.*—A detailed history should be taken with special attention to recent illnesses, drug ingestion and vaccination. Manifestations of early syphilis should be asked about in the vernacular, and questions should be included about "arm and hip shots," previous blood tests and miscarriages. The family history should be taken with syphilis in mind and in difficult cases it may be necessary to examine all sexual contacts, children, parents and other members of the family. The utmost tact, sincerity and strict privacy are essential. A few patients will attempt to deceive the examiner.

2. *Physical examination.*—A thorough physical examination is necessary, with special attention to the skin, mucous membranes, eyes and eyegrounds, teeth and gums, genitalia, heart, nervous system, spleen and lymph nodes.

3. *Laboratory procedures.*—(a) Blood.

1. Repeated quantitative serologic tests: These are most important and should be done at weekly or biweekly intervals by the same procedure in the same laboratory. Reactions using cardiolipin-lecithin antigin are desirable but not essential. In the interpretation of the results, the four cardinal points regarding false positive reactions should be borne in mind. Late latent syphilitic patients, particularly after prolonged treatment, may cause confusion as they often show paradoxical behavior in their serologic reactions.[50]

2. Repeat tests using at least one complement fixation and one flocculation type procedure. This is fundamental. Where available, a battery of tests is valuable.

3. "Verification" tests: These reactions, such as the Kahn verification test, as well as several other differential procedures, utilize the fact that nonspecific sera, under certain conditions, react differently from specific sera. They are useful as diagnostic aids when considered in the light of other findings.[51, 52, 53, 54, 55, 56]

4. The provocative procedure: In the patient with untreated early syphilis, the serologic titer may increase sharply, reaching a maximum five to ten days following the injection of an arsenical. Quantitative tests are run every other day for fourteen days following the injection, and then compared with the previous serologic titer. There is some question about the significance of this procedure and it should not be relied upon solely.[15, 57]

5. Special serologic procedures: Certain persons apparently give positive reactions to all complement fixation tests, regardless of the antigen used.[1] Reactions using spirochetal antigens and nonspecific antigens such as those prepared from milk or bacteria may be used. There are other special serologic procedures which may be of value, particularly in the differentiation of malaria.[58, 59]

6. Serum protein studies: Changes in the total serum protein or in the globulin fraction occasionally may be helpful, as may be electrophoretic analysis.

Neurath[4] and his coworkers recently have demonstrated significant differences in the serologic titers of the serum globulin and euglobulin fractions in nonspecific sera as compared to sera from syphilitic persons.

7. Thick and thin blood smears for malaria and differential smears for infectious mononucleosis should be made.

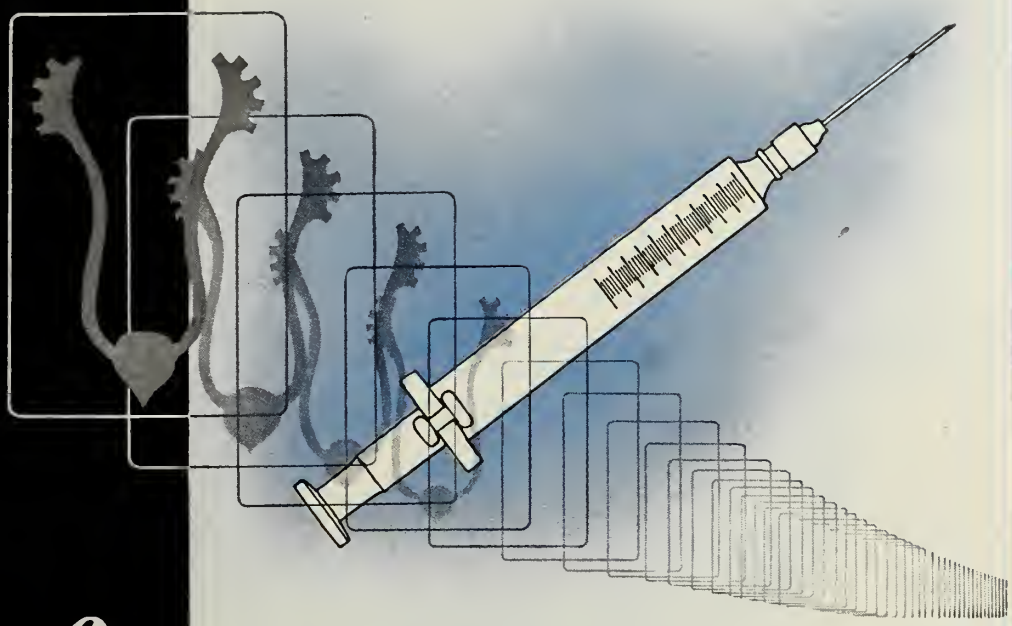
8. Heterophile antibody reaction should be obtained.

9. Sedimentation rate should be determined.

10. Agglutination tests should be done.

(b) Spinal fluid examination: It is felt that this is essential. Conflicting or fluctuating blood serologies occur frequently in late central nervous system syphilis, particularly tabes dorsalis.

(c) Fluoroscopic studies of the heart and aorta,



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DISCUSSION

Modern serologic tests for syphilis are invaluable procedures as diagnostic aids and treatment guides for patients with syphilis, and this paper is not meant to cast doubts on their reliability. The physician should be suspicious, however, of the positive or doubtful report on the blood from a patient with a completely negative history and physical findings of syphilis. Especially since the advent of penicillin therapy for syphilis, the treatment of this disease may be started hastily in doubtful cases. Subsequent serologic reversal in these cases would thus be attributed to the treatment, and the patient labelled as having had syphilis. When false seropositivity is suspected, haste in instituting antisyphilitic treatment is to be avoided, and the patient studied over a period of months. Weekly or biweekly quantitative serologic tests are most important. A persistently strongly positive reaction with high or rising titer is usually diagnostic of syphilis. A positive flocculation and negative complement fixation reaction, low titered or weakly positive reactions, fluctuating or decreasing titer or conflicting reports, should arouse suspicion of serologic nonspecificity.

SUMMARY

A résumé of the incidence and nature of the false positive serologic reaction for syphilis has been given. An outline of procedures for the differentiation of false from syphilitic seropositivity has been presented. Careful and complete study over a period of months may be necessary in the differentiation.

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SEAT NEXT TO DRIVER CALLED MOST DANGEROUS

Automobile passengers occupying the front seat next to the driver are in the most dangerous position in the car, according to a Detroit plastic surgeon writing in the May 22 issue of *The Journal of the American Medical Association.*

Claire L. Straith, M.D., chief of the Plastic Surgery Division, Harper Hospital Detroit, says that occupants of the "death seat" beside the driver are injured at the rate of about three to one, as compared to the driver.

In a study of fifty consecutive patients with facial injuries from automobile accidents, Dr. Straith discovered that about 70 per cent were young women and girls who had been riding in the front seat next to the driver.

Substantiating his "death seat" theory, the Detroit surgeon cites figures secured from the Detroit police department, showing that in 219 accidents involving multiple occupants, 260 passengers but no drivers were injured.



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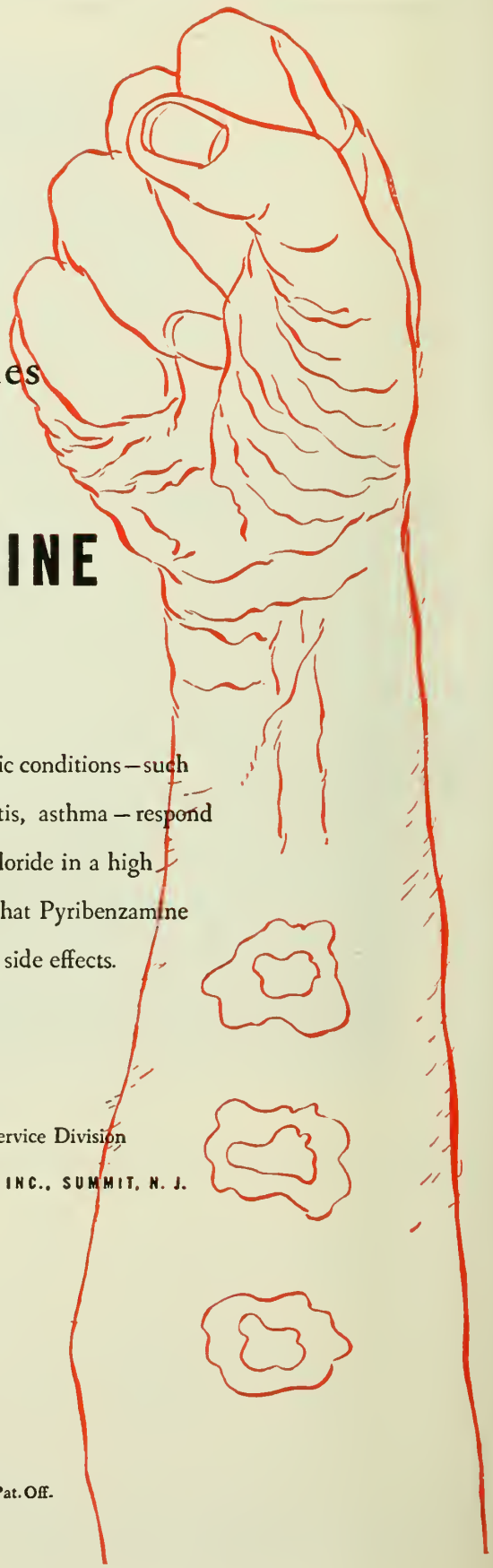
Return postcards were sent recently to all members requesting that they assist the program committee—Committee on Scientific Work—in the selection of subjects for the scientific program for the next Annual Session of the Missouri State Medical Association. Although the session will not take place until March 27 to 30, 1949, in in Kansas City, plans must be completed far in advance of that time.



The Committee on Scientific Work has had its first meeting. The program will be made up of subjects suggested by our members. Therefore, it is your program. If you have not already done so, mail in your card or a letter now. List the subjects you would like to have presented and the names of the speakers you would like to hear.

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EDITORIALS

THE MISSOURI HOSPITAL PLAN

The hospital construction plan for the State of Missouri was approved by the Surgeon General of the U. S. Public Health Service, April 2, 1948. By this action Missouri becomes eligible to participate in the nation wide hospital construction program under the terms of the Hill Burton act, approved by President Truman in August 1946.

This act provides that approximately 2¼ million dollars will be made available to Missouri for each of the next five years—a total of 11¼ million dollars. These funds may be used by the state itself, any county or community in the state, or by any nonprofit hospital association or group. The federal funds will be allocated on the basis of one third of the cost of the project, whether it be for new construction or an addition to present facilities. Thus, the group applying is required to pay the remaining two thirds of the cost.

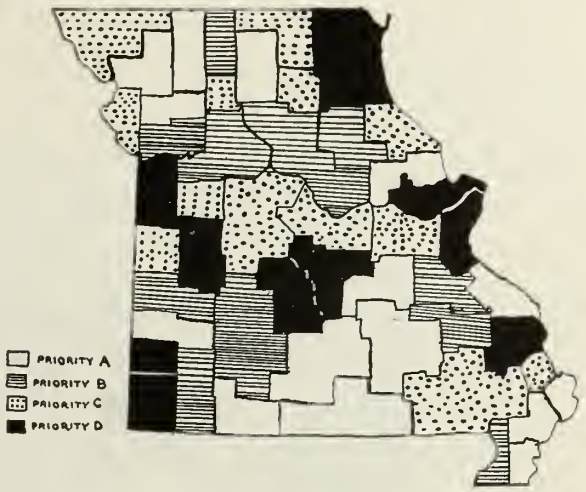
The plan itself is the outgrowth of a survey which was made by the Division of Health of Missouri in collaboration with a hospital advisory council of seven persons who were appointed by the Governor. A complete list of all hospital facilities and health centers is included in the survey and the hospital plan sets out the various areas of the state where new hospitals or additions to present hospitals are needed. A priority rating system has been worked out whereby the areas having the greatest need will receive first consideration for the federal funds.

The following chart gives the various priority ratings.

PRIORITY RATINGS

Priority	Percentage of Need Met	Number of Areas
A	0- 25	15
B	26- 50	11
C	51- 80	13
D	81-100	10

The map shows the areas and their priority ratings.



Application blanks have been sent to all areas in "A" priority. These areas are permitted thirty days in which to indicate they are ready to proceed with construction this year.

When these are returned the first project construction schedule will be made. If there are not enough areas in this priority group ready to proceed with construction at that time, areas in "B" priority will be contacted. Those areas in "C" and "D" priority will be approached last as the survey indicates that in those areas a large percentage of the hospital need already has been met.

Several areas have indicated their desire to proceed with construction and it is expected that individual projects will get under way shortly.

"DRAFTING OF PHYSICIANS"

A meeting of the Council on National Emergency Medical Service of the American Medical Association took place in Chicago, April 5 and 6. Representatives of the Missouri State Medical Association were present.

Considerable information was presented regarding atomic energy and atomic warfare, civilian defense resulting from the use of atomic weapons, the needs of the armed services of the country in a preparedness program and the possible drafting of physicians.

A statement of the position of the American Medical Association on a proposal to induct physicians in connection with the contemplated revival of the selective service act is as follows:

"Preliminary prints of a Senate bill to provide for the Common Defense by Increasing the Strength of the Armed Forces of the United States, and to provide for a Universal Training Program contain a section which would authorize the President, pursuant to requisitions submitted by the armed forces, to make special calls for members of the medical, dental and veterinary professions, who have not yet reached the age of 45 at the time of such call, in such classifications and in accordance with such priorities as he shall determine. Persons so called



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will be liable for induction for service in the armed forces in accordance with such procedures as the President shall prescribe.

"Such provision is unnecessary, discriminatory and constitutes a reflection on the patriotism of the medical, dental and veterinary professions. Confining this statement to the proposed induction of physicians, it is strongly urged that during World War II, the medical profession met every demand for medical personnel without compulsion by law. It will do so again if the need arises. The provision is therefore unnecessary and infers that in the case of urgency the medical profession will not respond to the needs of the armed services. It would seem to be predicated on a lack of faith in the patriotism of members of the profession. There is nothing in the history of American medicine to warrant such an inference.

"If a revival of the selective service program is made effective, there will arise a need for scientific and technical personnel, other than the three groups specifically mentioned, who are above the age limits to be applied to selectees generally. Until provision is made for the induction of such other personnel, it is discriminatory to single out physicians, dentists and veterinarians and subject them to compulsory induction.

"The Association, through its Council on National Emergency Medical Service, has been actively engaged for many months in planning for the medical, health and sanitary needs of the nation in event of a national emergency. At a meeting held in Chicago, April 6, the Council gave careful consideration to the present proposal to induct physicians by law into the armed services. Resolutions were adopted embodying in substance the objections to the proposal summarized in this statement. These objections have since been reaffirmed by the executive committee of the Board of Trustees which has authorized this statement.

"It is urged, therefore, that the provision under which physicians may be inducted as such by compulsion of law be eliminated from proposed legislation to revive selective service."

Letters outlining the position of the American Medical Association and the Missouri State Medical Association on this subject were sent to all members of Congress from Missouri.

NATIONAL HEALTH ASSEMBLY

The National Health Assembly convened in Washington, D. C., May 1 to 4. Approximately 800 persons from all over the United States were in attendance. The National Health Assembly is a nonprofit corporation, formed February 16, 1948, in Washington, D. C. Many observers believe that this organization has been especially formed to act as the new nongovernment agency to sell the American people President Truman's 21 point program on health and welfare, the major plank of which is compulsory health insurance.

The Federal Security Administrator, Mr. Oscar Ewing, opened the Assembly with an address of welcome, highlighted by the following remarks:

"I conceive the job before this Assembly to be (1) to see what we have—to know accurately the health facilities and personnel of the nation and of each community, (2) to determine what we need —the difference between the two will show us our health deficits, (3) to devise feasible methods of meetings these deficits."

"There are great areas in which there are no fundamental disagreements — we can stake out these noncontroversial areas—move ahead in them while we are fighting over the things in which we are in disagreement—during the war the Red Cross had 7,000,000 volunteer workers who, if aroused, and given proper technical leadership could move mountains in the field of health."

The work of the Assembly was broken into sections as follow:

Section 1. What is the nation's need for health and medical personnel?

Section 2. What is the nation's need for hospital facilities, health centers and diagnostic clinics?

Section 3. What is the nation's need for local health units?

Section 4. Chronic disease and the aging process.

Section 5. A national program for maternal and child health.

Section 6. A national program for rural health.

Section 7. What is the nation's need for research in the service of health?

Section 8. What is the nation's need for medical care?

Section 9. State and community planning for health.

Section 10. Physical medicine and rehabilitation.

Section 11. What can be done to improve dental health?

Section 12. A national program for mental health.

Section 13. What can be done to improve nutrition?

Section 14. A national program of environmental sanitation.

Preliminary reports indicate that the section topics which are more controversial and are stated as questions caused much more interest and discussions than the others. Section 8 of the Assembly, which has as its subject, "What is the Nation's Need for Medical Care?" provided the main point of interest. Dr. Roscoe Sensenich, President-Elect of the American Medical Association, was a member of this panel and he outlined the 10 point program of the American Medical Association and criticized the idea of government control of the distribution of medical care.

The National Health Assembly was financed by contributions from the following: Millbank Foundation, American Cancer Society, American Red Cross, Infantile Paralysis Foundation, Lasker Foundation, Rosenwald Foundation. This group contributed the sum of $45,000. Further reports of the Assembly will be carried in later issues of THE JOURNAL.

NEWS NOTES

Lauren V. Ackerman, M.D., Columbia, spoke at the Marquette University School of Medicine, Milwaukee, on April 14, on "The Pathologist's Responsibility in the Treatment and Diagnosis of Cancer."

James L. Mudd, M.D., and Julius Jensen, M.D., St. Louis, took part in a symposium on "Heart Disease" at St. Mary's Hospital, East St. Louis, on April 1. Dr. Mudd spoke on "Surgery of the Heart," and Dr. Jensen on "Heart Disease in Pregnancy."

Juan Regato, M.D., Columbia, spoke at the Foundation of Research Treatment of Carcinoma in Sante Fe, New Mexico, under the auspices of the American Cancer Society, at a meeting April 12 to 17. His subject was "The Indications and Results of Radiotherapy in the Treatment of Carcinoma."

E. E. Gay, M.D., Richmond, was elected president of the Richmond school board on April 6.

The Ellis Fischel State Cancer Hospital, the American Cancer Society and the Missouri Division of the American Cancer Society sponsored a dinner meeting in Columbia on May 27 at which C. D. Haagensen, M.D., New York, spoke on "Carcinoma of the Breast."

MUSINGS OF THE FIELD SECRETARY

Overheard—a physician remark to a group of lay people that many physicians are not as busy as they pretend; some use the time element as an excuse to get out of doing things they prefer not to do, particularly in reference to civic activities.

Overheard—a Past President of the Association say at the recent Annual Session that during the many years he had been attending the Annual Sessions he never before had seen as many members from rural Missouri in attendance.

Information from various sources seems to indicate that many doctors are refusing to make home calls. Even though these decisions may be justified completely in the minds of these physicians, what about the impression on the patient and his family —good public relations? Of what benefit are the present high standards of medicine if the sick, for one reason or another, cannot secure medical care?

Overheard—the principal of a large high school state that he was anxious to have physicians, particularly local ones, speak to his students on health subjects, either in classes or assembly.

A stranger from a neighboring state dropped in to the headquarters office recently seeking the names of a number of physicians who limited their practice to a specific type of work. In consulting the telephone directory he found doctors of medicine listed under one heading, "Physicians and Surgeons—M.D." His point was—how should a stranger, particularly in a large city, select a doctor?

Overheard—a college freshman say in a recent open meeting that until there is socialized medicine in this country many people will not be able to get physical examinations and have better health. This statement was expressed at a health education conference following a panel discussion on school health programs when questions from the floor were called for. The moderator of the panel, not a physician, did not give either of two M. D.'s on the panel an opportunity to reply to the statement —it was passed over. Should not this college student have had an answer to her statement then and there? The subject is of sufficient importance to the health of this country that any health conference or meeting can well afford to have the pros and cons uncovered.

Overheard—a referring physician remark that to find out what had been done to and for the patient, he had to call the family, a period of three weeks having elapsed. Seems there might be evidence here of a need for a bit of improved "public relations" within the profession, all for the good of the patient. Is not that which proves good for the patient usually good for the doctor?

Should not more attention be given to what happens to and what can and should be done for that large number of good premedical students who fail to gain admission to medical school because there are not enough openings? Many of these students in pursuing their education further follow the theory that if one cannot get grade A in the product wanted, take grade B or C. In the long run who loses from this situation?

DEATHS

Lester, Rollo B., M.D., Nevada, a graduate of Washington University School of Medicine, 1904; member of the Vernon-Cedar County Medical Society; aged 72; died February 14.

Griffith, Edgar M., M.D., Harrisonville, a graduate of the University Medical College of Kansas City, 1911; member of the Cass County Medical Society; aged 64; died February 21.

Barnes, Percival C., M.D., University City, a graduate of St. Louis College of Physicians and Surgeons, 1906; honor member of St. Louis Medical Society; aged 74; died February 27.

Wright, Gordon D., M.D., St. Joseph, a graduate of the University Medical College of Kansas City, 1898; member of the Buchanan County Medical Society; aged 77; died February 27.

Ozias, Charles R., M.D., Eureka, a graduate of the University of Oklahoma School of Medicine, 1914; member of the St. Louis County Medical Society; aged 56; died March 10.

Murphy, John Patrick, M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1924; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 62; died March 21.

Coffey, William H., M.D., Parkville, a graduate of the Missouri Medical College, 1886; honor member of the



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Jackson County Medical Society; retired; aged 86; died March 25.

Brookes, Theodore P., M.D., St. Louis, a graduate of Washington University School of Medicine, 1909; Fellow of the American Medical Association; honor member of the St. Louis Medical Society; aged 61; died April 1.

Vogler, Alfred T., M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1904; Fellow of the American Medical Association; aged 66; died April 1.

Yount, William E., M.D., Cape Girardeau, a graduate of Vanderbilt University School of Medicine, 1898; Fellow of the American Medical Association; honor member of the Cape Girardeau County Medical Society; aged 75; died April 6.

Fasset, Charles Wood, M.D., Burlingame, California, a graduate of Ensworth Medical College, 1900; honor member of the Buchanan County Medical Society; retired; aged 86; died April 14.

STATE MUST NOT CONTROL DOCTORS

The following is quoted from the *Bulletin of the St. Louis Medical Society* of April 23:

"The strongest argument against socialized medicine is not the enormous drain on the taxpayers it would entail, important as that is. It lies in the fact that the profession of medicine, like the practice of the arts and higher crafts, is almost entirely dependent on individual ambition, ability and incentive for progress.

"The doctor, like the musician or playwright, works in cooperation with others to gain some given end. But this is not the kind of flat, unimaginative mass effort that characterizes the working of a bureaucracy, where mediocrity gets the rewards, and brilliance and enterprise are frowned upon. The individual must be supreme. One of his chief assets is the right to experiment in an atmosphere of freedom. He must be ready to intelligently deal with the new and the uncharted. He cannot be bound by a set of inflexible rules.

"When the state runs everything, a man's politics are all important. That, and his ability to earn favoritism from the bosses, determine the kind of job he gets. But when politics and patronage determine what doctor shall be chosen for promotion, or what writer or musician shall be published and heard, a shameful decline in standards is the inevitable result—as the Soviet Union so thoroughly proves. In the case of the arts, it forces the people to see inferior plays or read inferior books. In the case of medicine, it costs lives.

"There is no relationship quite like that between the doctor and those he serves. The state must not be permitted to destroy it."

NATIONAL CONFERENCE OF COUNTY MEDICAL SOCIETY OFFICERS

The third National Conference of County Medical Society Officers will take place in Chicago at the Palmer House on Sunday, June 20, at 10:00 a. m. The expressed purpose of the conference is "To develop a working partnership between the American Medical Association and every physician."

Three panel discussions will be presented:

1. The County Medical Society: Its Part in Medical Organization.

2. The County Medical Society: Its Responsibilities to the Membership.

3. The County Medical Society: Its Responsibility to the Public.

SOCIETY PROCEEDINGS

FIRST COUNCILOR DISTRICT

H. E. PETERSEN, ST. JOSEPH, COUNCILOR

Carroll County Medical Society

Thirty physicians from Caldwell, Carroll, Daviess, Grundy, Harrison, Linn, Livingston, Mercer and Ray Counties attended a dinner meeting at the Strand Hotel, Chillicothe, on April 15.

A. P. Rowlette, M.D., Moberly, presented an interesting demonstration and discussion of "The Treatment of Hand Injuries."

The meeting was sponsored by the Carroll County Medical Society. Another meeting of the group is scheduled for June 3.

John H. Platz, M.D., Secretary.

FOURTH COUNCILOR DISTRICT

OTTO W. KOCH, CLAYTON, COUNCILOR

Lincoln County Medical Society

A dinner meeting of physicians from Lincoln, St. Charles and Warren counties drew an attendance of twenty-six physicians and guests at the Southern Air, Wentzville, May 4.

Paul C. Schnoebelen, M.D., St. Louis, discussed "The Scout Film in X-Ray Diagnosis."

Robert Mueller, M.D., St. Louis, President, Missouri State Medical Association, spoke on "A Challenge to Medicine."

A program committee composed of one physician from each of the three counties was appointed to arrange for future joint meetings. The next meeting is scheduled for September.

J. C. Creech, M.D., Secretary.

St. Louis County Medical Society

The St. Louis County Medical Society held its regular meeting on March 10 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

On motion of Dr Steubner, seconded by Dr. Rosenberg, the Society delegates to the Missouri State Medical Association were instructed to bring before the meeting the problem of the reported occupancy of approximately 80 per cent of Veteran Administration hospital beds by nonservice connected cases with the aim of taking all possible steps to restrict these hospitalization privileges to those individuals actually unable to pay for private medical care. The motion passed.

Dr. Magness presented the request of Mrs. Hazel Miller for approval by the Society of her Home Hospital Service. On motion of Dr. Irick, the Society endorsed in principle the home nursing care provided by the Home Hospital Service.

Dr. Sharp reported that the supply of Red Cross immune globulin for modification of measles was not unlimited and that the Health Department recommended its use chiefly in children less than 2 years of age, debilitated children or pregnant women.

A letter from the St. Louis Chapter of the American Red Cross was read requesting support for the pro-

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posed blood program. Upon motion this was referred to a committee for further consideration.

George Saslow, M.D., St. Louis, presented an informative discussion on "Psychosomatic Problems in General Practice."

Meeting of March 24

The Society met on March 24 at the Health Center, St. Louis County Hospital, Clayton.

Action on the report of the Health and Public Policy Committee on the proposed Red Cross blood program was delayed until the April 14 meeting.

Dr. Koch reported that approximately 1,070 persons were registered at the Missouri State Medical Association Annual Session and that next year's meeting will be held in Kansas City.

Dr. Jensen reported on the duties of the delegates at the session and discussed factors which should influence their selection in the future.

Dr. Hale gave a brief report on the House of Delegates sessions.

Virgil Scott, M.D., St. Louis, gave an informative presentation on "The Treatment of Syphilis." This was discussed by Drs. Brown, Backlar, Sharp, Graeser, Hale, Rosenberg, Luedde, Spitzer, Skinner and Hageman.

Robert C. Kingsland, M.D., Secretary.

FIFTH COUNCILOR DISTRICT

J. F. JOLLEY, MEXICO, COUNCILOR

A meeting of the physicians of the Fifth Councilor District and adjacent counties was held at Central College, Fayette, the afternoon and evening of April 29. The physicians of Howard County were hosts at a delightful social hour preceding the evening session.

The scientific program in the afternoon was presented by O. P. J. Falk, M.D., St. Louis, and C. E. Burford, M.D., St. Louis. Dr. Falk spoke on "Caronamide as an Adjunct to Penicillin Therapy." Dr. Burford discussed "The Prostate Gland." These presentations were unusually well received.

Following a complimentary dinner given by the College, the ninety-five physicians and guests were given a splendid report from representatives of the Kansas Medical Society on the "Recent Federal Court Proceedings Involving Osteopaths and the Practice of Medicine."

J. F. Jolley, M.D., Councilor.

SIXTH COUNCILOR DISTRICT

R. W. KENNEDY, MARSHALL, COUNCILOR

Vernon-Cedar County Medical Society

Fifty-two physicians and guests from Barton, Bates, Benton, Cass, Cedar, Dade, Dallas, Henry, Hickory, Jasper, Johnson, Lafayette, Pettis, Polk, Saline, St. Clair and Vernon counties attended a joint dinner meeting sponsored by the Vernon-Cedar County Medical Society at the Mitchell Hotel, Nevada, April 27. An enjoyable social hour preceded the dinner.

The program was presented by Everett D. Sugarbaker, M.D., Jefferson City, who spoke on "Carcinoma of the Large Bowel."

Among the guests present was Wallis Smith, M.D., Springfield, President-Elect of the Missouri State Medical Association.

The Councilor of the District, R. W. Kennedy, M.D., Marshall, was asked to decide the place and date of another joint meeting in the early fall.

R. B. Wray, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

Phelps-Crawford-Dent-Pulaski County Medical Society

W. H. Breuer, M.D., St. James, was the guest of honor at a meeting of the Phelps-Crawford-Dent-Pulaski County Medical Society on April 23 held in celebration of the culmination of fifty years in the practice of medicine by Dr. Breuer. The meeting was held at the Edwin Long Hotel, Rolla.

Following a social hour one hundred members and guests were seated at a table decorated tastefully reminiscent of fifty years ago.

A. R. McComas, M.D., Sturgeon, was an excellent toastmaster and called upon many of Dr. Breuer's friends for brief remarks, among them eight Past Presidents of the Association, the President, the President-Elect and four Councilors.

R. Emmet Kane, M.D., St. Louis, was the principal speaker. His subject was "Fifty Years of Medical Progress in Missouri" in which he entertainingly outlined the changes in the practice of medicine which have taken place during the time Dr. Breuer has practiced.

M. K. Underwood, M.D., Secretary.

South Central Counties Medical Society

The South Central Counties Medical Society met for dinner at the Hinkle Cafe, Cabool, on April 16, with the following members and guests present: J. A. Fuson, M.D., Mansfield; R. W. Denney, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, Jr., M.D., Cabool; T. J. Burns, M.D., Houston; E. C. Bohrer, M.D., Rollin H. Smith, M.D., and A. H. Thornburgh, M.D., West Plains; A. J. Bondurant, M.D., and J. G. Siceluff, M.D., Springfield.

After dinner the meeting was called to order in the office of Dr. Hogg by Dr. Hogg, the vice president. The minutes of the last meeting were read and approved.

It was suggested that the Society invite the state senator and representative to meet with it sometime this summer to discuss medicolegal conditions. No action was taken.

Dr. Bondurant spoke on the course being pursued by the Tuberculosis Division of the Veterans Hospital at Springfield, of which he is chief, in the management looking to the rehabilitation of veterans with tuberculosis.

Dr. Siceluff spoke on "Carcinoma of the Prostate" and stressed the benefit to be obtained by castration, although it cannot be expected to effect a cure, and other treatment as a substitute when this cannot be done.

A vote of thanks was given the speakers and the meeting was adjourned to meet in Mountain Grove on May 21.

A. C. Ames, M.D., Secretary.



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Vaginal Approach to Pelvic Surgery, one week, starting September 27.
OBSTETRICS—Intensive Course, two weeks, starting June 21, September 27.
MEDICINE—Intensive Course, two weeks, starting October 11.
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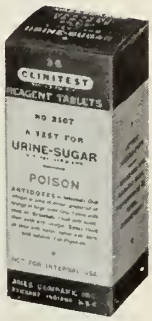
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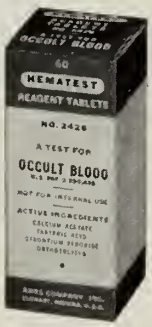
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Charles J. Marshall, New York Journal of Medicine, Vol. 34, Aug. 15, 1934

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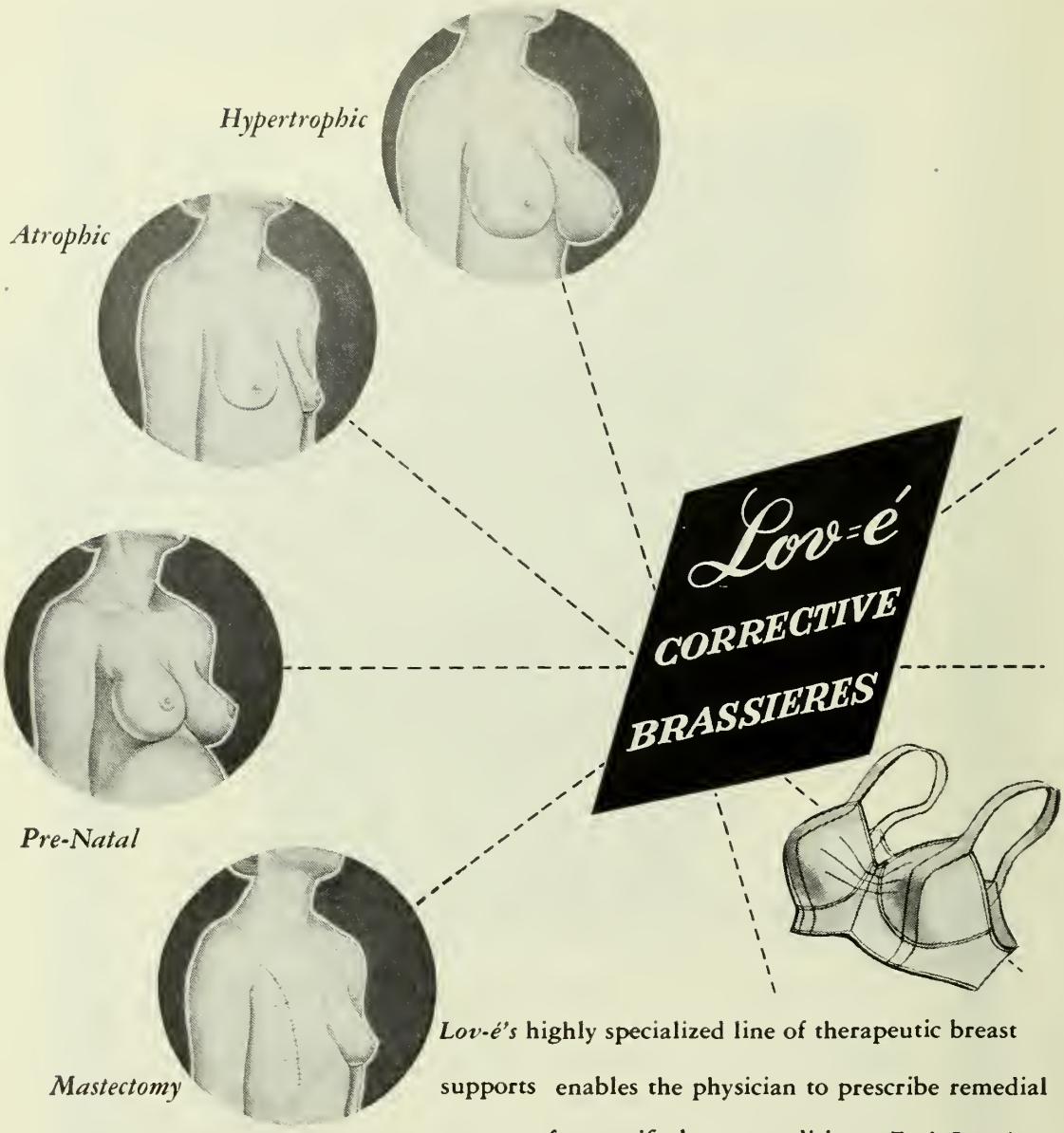
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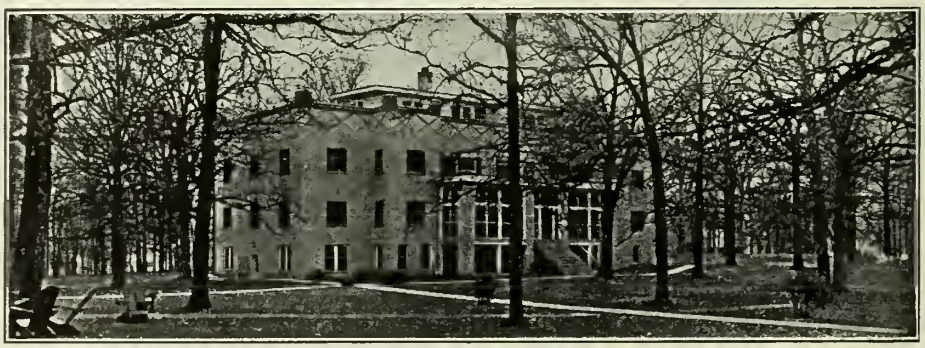
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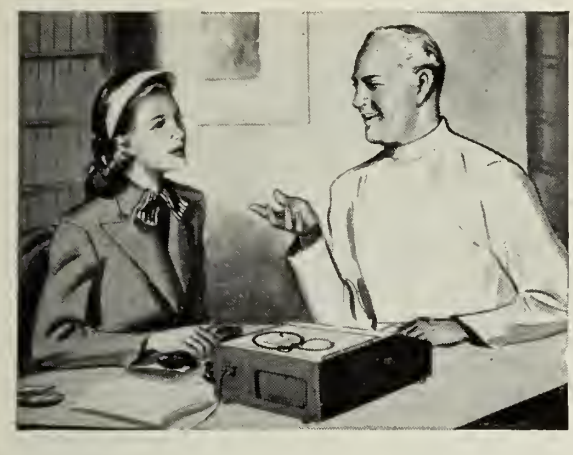
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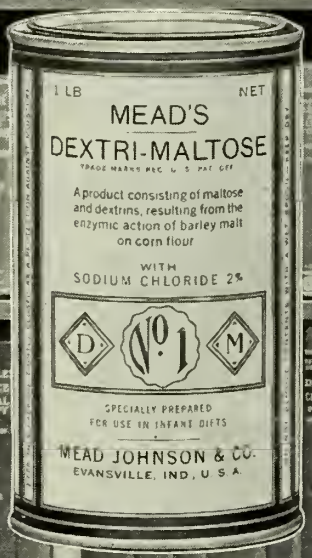
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[1] Stuart, H.C.: Effects of Protein Deficiency on the Pregnant Woman and Fetus and on the Infant and Child, New England J. Med. 236:507 (Apr. 3) 1947.

[2] Zeigler, R.F., Jr.: Pre-eclamptic Toxemia of Pregnancy. North Carolina M. J. 8:655 (Oct.) 1947.

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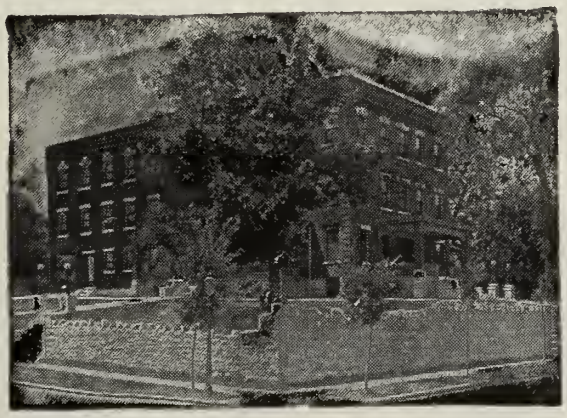
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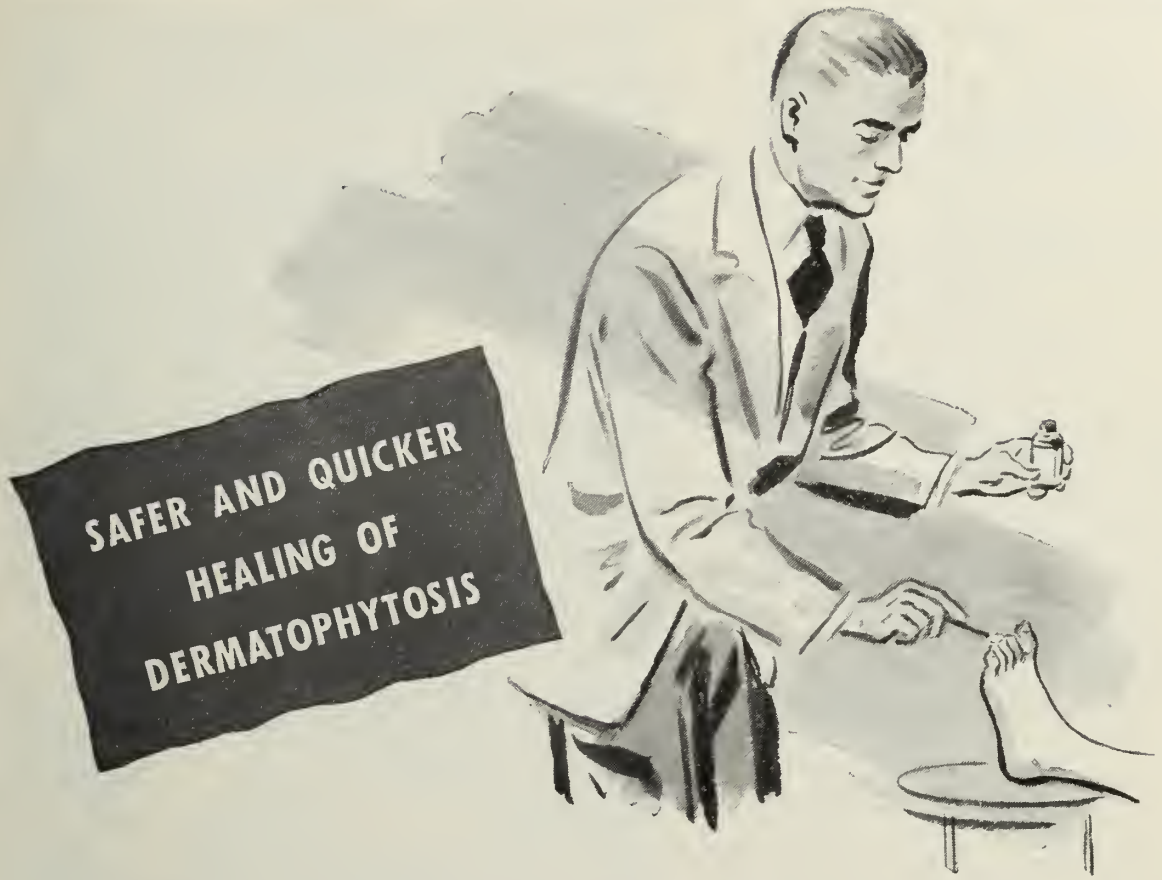
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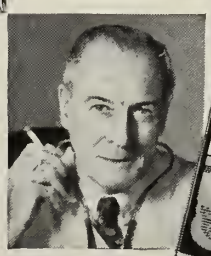
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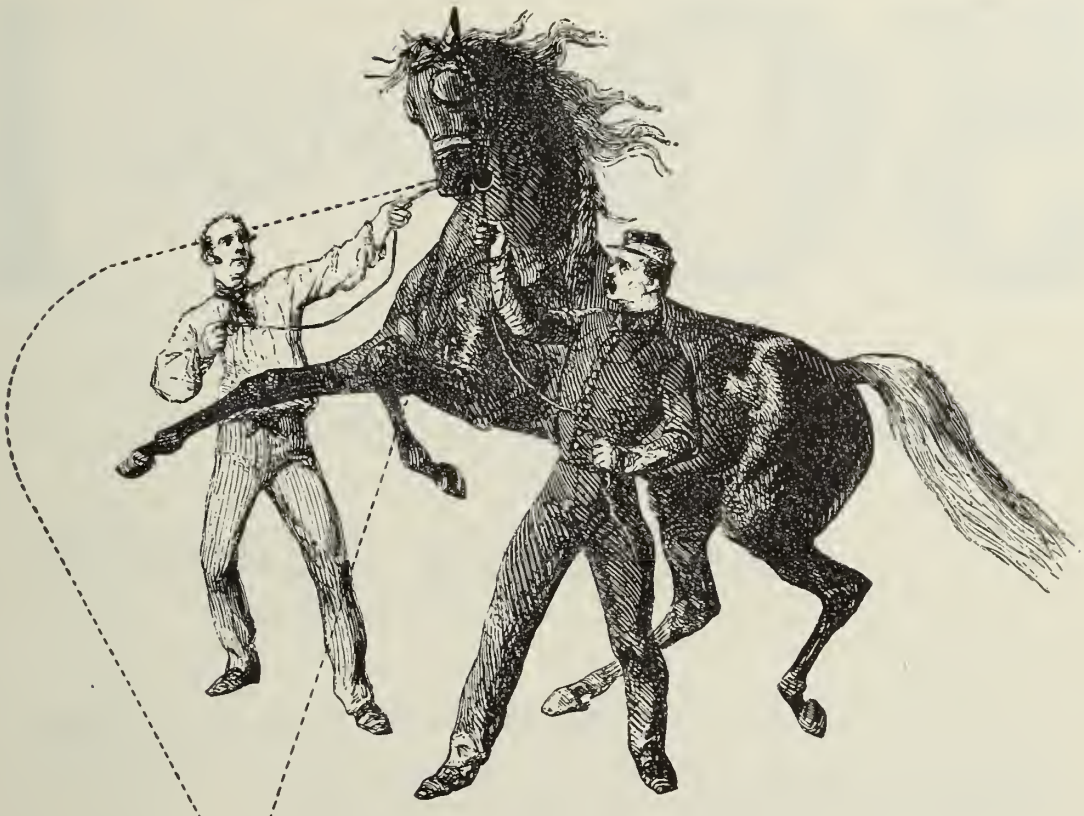
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OF THE

Missouri State Medical Association

The Official Organ of the State Association and Affiliated County Societies
Issued Monthly under direction of the Publication Committee

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VOLUME 45 | JULY, 1948 | NUMBER 7

G. V. STRYKER, M.D., Editor
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NEW HORIZONS IN MEDICINE

EDWARD L. BORTZ, M.D., *Philadelphia, Pa.*

FOR SOME TIME I have been looking forward with pleasurable anticipation to the privilege of being your guest this evening. I know the high regard which American medicine has for the accomplishments of the medical profession in the sovereign State of Missouri. Your fair land has been celebrated in story and song. There is a breezy and robust affection on the part of all citizens for the people of Missouri.

In preparation for my visit, I have enjoyed reviewing Missouri's historic antecedents. In trade, industry and wealth, St. Louis is one of the most substantial cities in the Union. Its growth and expansion has been steady, without the "booms" which have marked the history of other midwestern cities, such as Chicago. Indeed, St. Louis has, for some decades, been the avowed rival of Chicago. It is interesting that in the most recent edition of the "Encyclopedia Britannica," St. Louis is described as having a reputation for conservatism and solidity. These, indeed, are qualities greatly needed throughout the entire world today.

A GREAT MECCA

Travelers who have a flare for medical lore and who also have an interest in the scientific advances of medicine, turn their eyes toward St. Louis in acknowledgment of the contributions made by so many of its distinguished citizens. These have not been limited to the strictly scientific fields of medical study. Contributions of significant importance have been made also to the social phases of medical service. The rich endowments by geographical location and the strong personalities which have developed here make this community a Mecca for students of the medical arts from all over the world.

The opportunities for growth are many. There seems to be an atmosphere which encourages the young bloods in medicine to give their best in training for a great career when they come and sit at the feet of your masters. You lend encouragement to the important movements in organized medicine, and in the promotion of the basic sciences. There is a zest to the medical life of your community which gives all a real lift.

LEADERSHIP

Leadership in human relationships, especially those concerned with the problems of health and the control of disease, must arise from the medical profession. By natural aptitudes, training and experience, and by sympathetic contacts, physicians stand in intimate relationship to their fellow men. They know the happiness and fears, the traumas and the dissonances which beset humankind.

Leadership is a vital need, as a matter of fact not only in medicine but in all of the major fields having to do with social progress. And here let me pause to pay my personal tribute, and voice my respect for the inspirational guidance and sound advice which has been furnished to American medicine by certain of our nation's benefactors who are fellow workers in this community. Father Schwitalla is a national asset. His natural endowments and exquisite human qualities, combined with a keen insight and understanding of the problems of the day, have placed him high among the list of contemporary immortals. Indeed, as one thinks of our beloved friend, there comes to mind the words of Shakespeare: ". . . His life was gentle; and the elements so mixed in him that nature would stand up and say to all the world, 'This was a man!' "

Unfortunately, time does not permit further opportunity to list the many others. The contributions of Graham, Doisy, Kinsella, Wood, Simpson and

---

President, American Medical Association.
Presented at the 90th Annual Session of the Missouri State Medical Association, St. Louis, March 14-17, 1948.

many others, have accelerated the understanding of medical problems and made possible a higher quality of medical education.

NEW PROBLEMS

Reference frequently has been made to the high quality of the health of this nation. Granted, there are many areas in which the benefits of the understanding of health problems, the control of disease and public health essentials have not yet been applied. This is an important distribution problem, and, indeed, there is an educational phase to it also, which is amenable to correction when the public interest is sufficiently aroused. In general, the contributions of the medical profession to social progress and human betterment have been demonstrated by the spectacular increase in the human life span during the last one hundred years.

This year is the Centennial Anniversary year of organized medicine. It offers an excellent opportunity to survey the accomplishments of the medical profession since 1848. One hundred years ago the average life span was approximately 41 years, and today it is somewhat over 67 years. Not only are people living longer; they are healthier. Family circles are being preserved over a longer length of time. Individuals should be happier.

People are living longer because the scientific method has paid rich dividends. More is known about the nutritional needs of the body, the control of infectious processes, the correction of glandular abnormalities. Lives are being preserved. More people are living into the later years. Thereby hangs another tale. For now, more than 600,000 of our fellow men are being destroyed each year by the wear and tear of human tissues; vascular degeneration is one of the major problems, possibly the number one issue which is a challenge to medical science today.

Cancer is another destructive process toward which scientific interest must be turned in more concentrated degree. Yet, there are thousands of men and women living today who have had cancer and who are living examples of the efficiency with which modern medical science may eradicate potential life-destroyers, provided, and, let me emphasize, provided they consult their physicians promptly when the first signs of a tumor appear. This may be in the form of a small mass in the breast or skin, or an abnormal discharge from one of the body openings. Prompt action has saved thousands of lives.

Rheumatism and arthritis are banes to the existence of many people. As yet, medicine stands in darkness, but hope is appearing on the horizon as science marches on.

NEW INSTRUMENTS

In an interesting book, the historian, James Phinney Baxter III pointed out that the explosion of the atomic bomb over Japan blasted the web of history and, like the discovery of fire, severed past from present.

Man has tapped the basic power of the universe. He has changed the world from one in which wars have been allowed to develop into one in which an effective organization to preserve the peace of the world is an essential condition for the survival of civilization.

The researches which led to the creation of the atomic bomb as an instrument of vast magnitude for human destruction have also unfolded a whole new world dealing with the chemical elements which are the basic units of the physical universe. The development of radioactive isotopes has been described as the most significant contribution to medical science since the discovery of the microscope. I shall not burden you with a detailed description of the physical and chemical qualities of the isotopes.

I want to emphasize these new materials of great significance which will promote a clearer understanding of the basic processes which sustain human life. Now scientists have instruments of precision with which to chart the activities of foodstuffs within the body. Better understanding of digestion and the working of the various endocrine glands is in the making. Now in research laboratories, workers may tag atoms and follow foodstuffs, hormones or various drugs as they enter the body. Their pathways will be lighted as these tiny radioactive tagged atoms, acting as neon lights, reveal the various pathways which substances follow as they enter the body, pass through the intestinal wall and go to their various stations, change and join their elements, finally attaining their ultimate usefulness with the casting off of the waste through normal channels. Can you understand the significance of this new realm of medical science? I visualize the attainment within the next quarter century of a clearer conception of the wear and tear processes which are the basis of heart disease, hardening of the arteries, stroke, high blood pressure and coronary occlusion. I can see a new day coming when cancer will yield its secrets. When its inner nature is known, then effective measures for control will be forthcoming. This, basically, is a problem in physiology; that is, the functioning processes within human tissues.

When this new knowledge becomes available, and it will be before too long, another spectacular increase in the span of human life will be brought about. I predict that the average life span of human beings will approximate 100 years as science gains greater control of the major diseases which now afflict those in the later years of life.

GOALS

This is indeed an exciting era. It is worth-while to pause for a time and ask ourselves whither we are going. After all, there is a bit of the philosopher in each, and sometimes for those who like to meditate in the afterglow of the day's work when the

busy world is hushed, one wonders about the nature of man and his motivations. One strives to gaze down the pathway which civilization is following today. Where are we going? What are our goals?

It is inherent to want longer life, happier and healthier existence and, incidentally, peace of mind. One of the best sellers, and a most worthwhile book, is entitled "Peace of Mind" by the distinguished Rabbi Liebman. It seems to define what all the world is seeking.

One of my good friends recently challenged me when I said that self preservation was the first law of nature. He cited impressive evidence to the contrary. On his side he mentioned two world wars, more than 100,000 people killed each year by accidents, and the routine practice of hurry, hustle, haste, waste and complete lack of organization, all of which brings premature human decay, and makes physical and nervous wrecks of great numbers of individuals at a time when means for healthier living and longer life have never been so clearly understood. Nevertheless, medicine's goals are for a healthier social order, a longer and more productive life for all citizens, more stable international relationships and peace of mind for all.

CLOUDS

It is easy to idealize; and I believe it is helpful to dream from time to time of those things which might be. As one lifts his eyes above the common herd and scans the horizons for evidence of things to come, there are certain clouds which obscure the view. It is curious, is it not, that better physical specimens are being developed and more is known about disease than was ever known before. But the clouds of misunderstanding threaten our existence, shrivel our intellects, destroy the happiness of social existence and shorten our very lives. As members of the medical profession, too often we neglect our important responsibilities as citizens. It has been said that some 2,000 physicians are carrying the load in the organizational work of medicine for their 180,000 colleagues.

There are disturbing elements in community life. Experiments in the democratic way of life which have an important bearing on the happiness, the health and certainly the security of all must be solved if, as a nation, we are to survive. I am frank to say that in my opinion, medical leaders, and members of our profession in general, have shirked, almost tragically shirked, their responsibilities as citizens. If our professional activities are now being threatened by visionary idealists who would take over the control of our professional destinies and make of them political capital, the goal resides not in our stars, but in ourselves that we are underlings.

The challenge is on the doorstep of American medicine; shall we continue as a free profession, unfettered and unembarrassed by political intrigue and back room maneuverings for power, and position, or shall we become alerted and accept our full responsibilities, not only as physicians who care for the ailments of our fellow-men but also as citizens who will exercise the full duties of citizenship in formulation of policies that will bring a broader life to our communities and a safer life to our nation?

"WHILE MEN SLEPT . . ."

In its broader applications, medicine is not so much the science as it becomes the art. The greatest of all arts is that of living. And, as a profession, medicine's responsibility is to see that its clients and those it serves have a healthier and more abundant existence. Not only is that medicine's birthright, it is its obligation.

To achieve our fullest opportunity, we must be alert to the dangers which threaten not only our profession, but the darkening clouds of international intrigue and the lust for world conquest. The far horizons of medical science reveal stars of scintillating beauty. Life science is the key to a happier social existence for all. But we need to lift up our heads, and, while keeping our eyes on the far objectives, take due notice of the dangers immediately surrounding us.

Organized medicine has an important role to play in bringing about a state of readiness for any catastrophe that might be upon us. There is superb leadership in the central headquarters of the American Medical Association and the officials of organized medicine are cognizant of the needs of the nation, medically speaking. Unfortunately, too few of the rank and file of the profession are awake to the ominous darkness which already has engulfed some of the nations of the world, and which may be upon us ere long.

Dr. Elmer Henderson, the distinguished chairman of the Board of Trustees of the American Medical Association, after a thorough personal investigation of the European situation, only recently stated, "Is is later than you think."

It might be well for us as citizens and members of a great profession to read again the parable in the scriptures, "While men slept, the enemy came."

NOW IS THE HOUR

Science has furnished the equipment and there is every indication that we may well be on the brink of a new era so far as the health, the control of diseases, the extension of the human life span, and the enjoyment of a larger social existence, if there is wisdom in the solution of the social problems which confront us. It seems to me, and I am by nature an optimist, that the dawn of a new day is at hand for a better enjoyment of life.

There is much work to be done and those who shirk their social and civic duties place a larger load on the shoulders of others who are willing to lay aside strictly professional responsibilities from time to time in order to aid in the search for a more satisfactory balance in the social scheme of things. I think I can say, without fear of contradiction, that never has organized medicine enjoyed

such a high position in the hearts of the people of the nation. Where misunderstandings exist, I am confident that means are available for the solution of the perplexities with little difficulty. Time is required, of course, but the goals to be attained and the dividends that will result justify the investment of our full interest and our best abilities.

Now is the hour for medicine to lead the way to a higher level of health for the nation and a better day for all mankind.

2021 West Girard Avenue

MEDICINE TODAY

ADDRESS OF PRESIDENT-ELECT

ROBERT MUELLER, M.D., *St. Louis*

American medicine faces a crisis in the year 1948. It has been stated that it is to be the most important year, legislatively speaking, in the history of medicine. The national political parties soon will be having their conventions. They will choose candidates for the Presidency of the United States and they will adopt platforms which will indicate the views of the respective parties on the important domestic and foreign issues of the times. These platforms should be analyzed carefully as they relate to the subject of medical care. If governmental sponsorship of medical care is recommended, physicians should then inform the people of the experience in other countries.

Government sponsorship has always resulted in a lowering of the quality of medical care and in the giving of inferior service to the people rather than an improvement in that service. United action will save the people and the profession from suffering the fate of medical service in Britain and the continental European countries. The demoralization of the profession reached its lowest ebb when German medicine, in its regimented form, before and during Hitler, resorted to human experimentation as revealed at the Nurenberg trials.

The three points advanced in favor of socialized medicine are: (1) adequate medical care to all the people, (2) improve public health, (3) reduce costs. Although Germany adopted socialized medicine in 1883 under Bismark who was really the Father of the idea and Britain in 1914, none of these objectives have been realized.

The medical profession in Missouri is perhaps better organized now than at any time in its history, and much constructive work is being done for the welfare of the people and of the profession.

The physician returning from the wars has had his fill of regimentation and is anxious to take his place in the ranks of organized medicine again after many long years spent in serving his country. It should be emphasized again and again that the medical profession is the only group of those practicing the healing arts that was privileged to attend the sick and wounded of this country in the late war. No other group was thought professionally qualified to do so.

The splendid work of organizing and consolidating the county medical societies wherever deemed necessary has stimulated enthusiasm throughout the state and has resulted in a stronger and more united profession. The contact of county societies with representatives of the state office has been sadly neglected in past years and it is hoped that this phase of our work will be increased as time goes on. The county societies should look to the state organization for leadership, and I am sure that leadership will not be found wanting.

The most important hospital construction activity during the coming year is that under the Hill-Burton bill. This, undoubtedly, is a most constructive move but great care must be exercised in plans for building as well as maintenance of these hospitals. If the maintenance of these proposed hospitals is not carefully and painstakingly planned there will be difficulties in the years ahead. It is also most important to elect or choose boards of directors who will be sympathetic with the medical viewpoint and improve—not retard— its progress.

The subject of public relations is a difficult and important one and has been given much thought by the Council. It was thought best to dispense with the services of the professional part time public relations counselor formerly employed and it has been decided to replace him by a permanent public relations member in the state office. This will reduce the expense, permit of greater exchange of thought and more time will be given to the expansion of the program.

There are many other activities, scientific as well as organizational, of which time does not permit full discussion now. All of these activities require the expenditure of funds and the members of the Association must decide whether they wish to continue these activities or not. There are some members who would go back to prewar days, make the state office more or less the bookkeeping department and lessen or abolish completely other activities. Missouri medicine must either advance or retreat—it cannot stand still!

Some of the organization work done in Missouri in recent years has been copied by other states. Its public relations work antedated that of the American Medical Association by several years, and several states are now studying our plan of integration of county societies with the employment

of a field secretary. All of this requires money. There are some men who have difficulty in believing that the cost of medical organization has increased even though they know that beef steaks cost twice as much as before the war; that butter costs $1.00 per pound; and that automobiles have nearly doubled their prewar price. Our employees too face high living costs in all things and must be compensated accordingly. The cost of materials has risen and other activities and supplies have increased in proportion until today our budget is barely covered by our income.

Missouri medicine with its present scale of activities cannot reduce the state dues under the present $15.00. Whether one calls it dues and assessment or just plain dues, it is the income that counts. Any reduction would jeopardize the present activities as well as the future of medicine in this state. We cannot go backwards—our only path is forward, with an expansion rather than a contraction of activities.

It may be of interest to compare Missouri state dues with those of other states. The dues for Missouri, at present, are $8.00 and $7.00 special assessment. The dues of other states are as follows: California, $67.00; Oklahoma, $47.00; Wisconsin, $33.00; Minnesota, $20.00; South Dakota, $50.00; Utah, $50.00; North Dakota, $35.00; Louisiana, $25.00; Arizona, $35.00. Only four states out of forty-eight have lower state dues than Missouri.

I am convinced that the members are more than willing to pay any amount that is required to maintain an efficient state organization, provided the money is efficiently and wisely spent and not wasted. This is also the desire of the officers.

The growth and expansion of the Blue Cross plans in Kansas City and St. Louis have been phenomenal. Together they cover more than one million persons, or one person per 3 7/10 population.

The prepayment medical and surgical care plans now cover one hundred sixty-seven thousand under the Kansas City surgical plan and ninety-six thousand under the Missouri State Medical and Surgical plan. It must be remembered that the Kansas City plan is now only four and one half years old and that the Missouri Medical Service is two and one half years. This is a tremendous growth in a short period of time. This success of hospital and health plans is a fitting answer to the proponents of socialized medicine, indicating that the people are willing and able to have their medical service on a voluntary basis and not on a government-sponsored compulsory one. The development and further expansion of these plans is a positive must if government medicine is to be prevented. The great majority of the people must eventually be covered by them.

In a democracy, fate rests with the people and not with dictators. We have faith in the people and in their chosen representatives. In all countries where socialized medicine has been thrust on the people, there is a lowering of the quality of medical care and demoralization of the profession. This is an inevitable consequence and a positive end result of the regimentation and political domination of the profession in all countries. Any lowering of medical efficiency results in a lowering of the quality of medical care, thereby accentuating the suffering of the people. It is not how much medical care is given within reason, but what type and quality of care. Medicine in these United States is the finest and most comprehensive in the world today. It is the solemn pledge of the profession to keep it that way under the free enterprise system.

Arcade Building.

PHYSICAL MEDICINE USED SUCCESSFULLY IN PARALYSIS

Marked success in the treatment of hemiplegia through the use of physical medicine is reported by Comdr. Edward W. Lowman (MC), U. S. N., of the Department of Physical Medicine, U. S. Naval Hospital, Philadelphia.

Physical medicine includes the employment of the physical and other effective properties of ultra-violet and infra-red rays, the use of heat, cold, water, electricity, massage, manipulation, exercise and mechanical devices for diagnosis and treatment of disease.

Writing in the May 29 issue of *The Journal of the American Medical Association*, Comdr. Lowman reports that out of eighteen chronic cases of paralysis due to brain hemorrhage, twelve learned to walk again after undergoing an intense program of physical medicine for 118 days, while three showed definite improvement. There was no improvement in the condition of the remaining three.

In ten additional new cases, nine of the patients learned to walk again after sixty-seven days of treatment, and improvement was noted in the other patient.

Commenting on the results of the treatment, Commander Lowman says that "the early, intensive and intelligent use of physical medicine, with emphasis on therapeutic reconditioning exercises, assures a potentially good prognosis in the rehabilitation of patients with uncomplicated hemiplegia."

The program of rehabilitation employed by the Navy doctor was begun from two to four weeks after the onset of the acute illness. The first stages included massage, application of heat and therapeutic baths, followed by active exercises in bed when voluntary motion was possible.

Efforts to learn to walk again were begun early, usually within two to eight weeks after treatment was started. This was a gradual process, beginning with sitting up in bed and placing the feet on the floor from the bedside, and concluding with exercises in the gymnasium.

The gymnastics program, which was conducted under the supervision of a trained physical therapist, consisted at first of simple mat exercises and ultimately of more difficult ones on bars, stationary bicycles and other devices. This program varied somewhat for each patient, depending on his physical and mental condition.

According to Commander Lowman, the greatest factor in the success of the rehabilitation treatment is "cooperation on the part of the patient, fostered by his desire to regain his independence."

DIFFUSE ARTERIOLAR DISEASE

H. O. LOYD, M.D., *Jefferson City, Mo.*

In this discussion I wish to substitute the term "diffuse arteriolar disease" for the more commonly used term of "hypertension." This is done for the reason that hypertension has become a term so commonly used that physicians are in the habit of labeling anyone with an elevated blood pressure exceeding 140/90 as a hypertensive. This is true to a limited extent only for, when one speaks of hypertension in a broad sense, one merely is saying that the patient has an elevated blood pressure but one is not classifying this condition nor is one trying to find the primary etiologic agent.

It is well to realize that practically all patients who have an elevated blood pressure are found in a general practitioner's office, for, like diabetes, the condition usually is silent in the early stages. Therefore patients, going to the office, many times are seeking aid for some trivial illness but are harboring the beginning of arteriolar degenerative process which, if allowed to run its natural course, will ultimately shorten the patient's life.

I feel, then, that the only logical approach in determining whether a patient has diffuse arteriolar disease is, first, to understand the meaning of the term and its implications, and, second, to have in one's mind a practical list of conditions causing hypertension secondarily and which, in certain cases, can be treated so that the hypertension becomes a reversible condition. By definition, therefore, essential hypertension, or diffuse arteriolar disease, is a disease process caused by generalized vasoconstriction of the arterioles of the body resulting, first, in increased diastolic blood pressure and, next, by an increased systolic pressure. The arterioles of the body chiefly concerned are those found in the splanchnic area, kidneys, heart and brain. The primary etiologic agent for this generalized spasm is not known. It might be well to add at this place in the discussion of diffuse arteriolar disease that much of the literature on this subject, which seems so confusing to the average doctor, is concerned with various theories trying to explain this generalized spasm. In the last ten years many different ideas have been brought forth in an effort to explain this condition, ranging from structural changes in the kidneys to a humerol explanation brough forth chiefly by Page of the University of Indiana. I believe it is accepted generally at present that much of the structural change seen in late arteriolar disease, consisting of hyalinazation of the intimal lining of the arterioles, medial hypertrophy and reduplication of the internal elastic membrane progressing into actual necrosis and hemorrhage, is a result of long standing vasoconstriction with secondary damage to the intima and muscular layers of the arteriole and that the changes seen, especially in the kidney, heart and brain, are a result of long standing ischemia of the arterial wall. Heinbecker, on the basis of experimental work, feels that smooth muscle as a result of some unknown initiating mechanism develops a property of continuous increased tone. For this reason he feels that long standing severe hypertensive patients fail to respond to any treatment.

In the past, the school of structural pathology has looked upon these lesions, seen under a microscope, as being related in some manner to the etiology of diffuse arteriolar disease. As I have mentioned, it is now felt by many authorities in the field that these lesions are a result rather than an effect, and that many times one has had the cart before the horse.

If one accepts, then, that this diffuse arteriolar disease, or essential hypertension, is caused by an increased spasm of the arterioles of the body, the exciting cause of which is unknown, it is an important thing to have a knowledge of other conditions which will produce, secondarily, a generalized arteriolar spasm. These are the more common conditions causing hypertension: diffuse glomerulonephritis, specific hypertensive disease of pregnancy, polycystic renal disease, pyelonephritic contracted kidneys, amyloid contracted kidneys, coarctation of the aorta, periateritis nodosa, adrenal and pituitary tumors and renal arterial obstruction.

There is also a group of diseases whose primary effect is upon the systolic pressure rather than the diastolic. The mechanism for the elevation of the systolic pressure is highly different from the effect of the diseases just mentioned and the pathologic basis is well understood in these cases. The systolic pressure may be elevated in aortic insufficiency, hyperthyroidism, heart block with slow heart rates and sclerosis of the aorta in which the large vessels lose their distensibility, becoming more rigid and thus elevating the systolic pressure. These conditions cause the changes in blood pressure by an entirely different mechanism than essential hypertension or diffuse arteriolar disease.

The true essential hypertensive represents a physiologic disturbance in which the factor of effective peripheral resistance is abnormal. As stated before the exact etiology of this increased vasoconstruction is not known.

Classifying diffuse arteriolar disease is difficult since the condition is so little understood. Since the advent of the surgeons in the treatment of hypertension, there have been two general methods in classifying diffuse arteriolar disease. The medical men in general have classified this condition on the basis of age and severity of the condition. The literature speaks of the mild, early transient hypertensive patient in which the cardinal finding is periods of elevated blood pressure, both systolic and

diastolic. This is seen in young people and, if there is a strong family background of hypertension, these people are sometimes called prehypertensives. There is no doubt that certain families have a strong tendency to diffuse arteriolar disease. Lately there has been used the so-called cold pressor test in which it is felt by some that potential hypertensive patients can be segregated from the general population. This is done by immersing one arm in cold water for a specified time and it has been postulated that those people in which the blood pressure elevation is over 20/15 above the control level will in all probability become hypertensive later in life. I think it generally is agreed by most men that this assumption is not entirely true for many positive reactors do not become hypertensive and, more important, a certain number of negative reactors have been known to become hypertensive. I feel, therefore, that from a practical standpoint those doing a general practice should be quite conservative in labeling patients as prehypertensive unless it is based upon a long period of observation and a detailed knowledge of the family characteristics.

The next group of hypertensive patients are the early sustained hypertensive, in which the age varies from 25 to 40. In this group one will find a mild degree of hypertension even when the patient is at absolute rest. The blood pressure will usually vary from 150 to 200 systolic and 90 to 100 diastolic. These patients in this group show minimal changes. Many times the fundus will show mild spasm and tortuosity to nothing at all, and the kidney function is good. These patients are usually free from symptoms. Also, the heart is within normal limits. It is in this group that proper medical management, which will be outlined later, yields the best results and oftentimes postpones the inevitable consequences of severe arteriolar disease.

Some men, notably Page, have subdivided this group into a neurogenic. This has been done because they have found that a certain number of these patients will lose their hypertension under anesthesia or heavy sedation with sodium amytal. They also find, upon detailed kidney function analysis, that the effective renal blood flow can be increased by heavy sedation. It is this group in which good results can be secured by cutting out external stimuli which seem to cause the abnormal vasoconstriction.

The next type of hypertensive patient is the chronic moderately advanced hypertensive. This group usually includes patients of middle life, from the ages of 35 to 50 or 60. When they consult the physician in the office, they usually give the complaint of high blood pressure as they are aware of the condition. They may complain of slight vertigo, headaches and, occasionally, mild paresthesias over the head or extremities. Their blood pressure usually is found even at rest to vary from 176 to 250 systolic and 100 to 130 diastolic. They may show some cardiac and electrocardiographic changes, which will be mentioned later in more detail. Eyeground examination shows arteriovenous compression to the more serious exudates in the peripheral field. These patients usually have had the disease long enough that the kidney function is impaired, showing mild or severe albuminuria, casts and a few red cells along with an impaired ability to concentrate urine. It is this large group of patients which comprise the main medical problem in the management of diffuse arteriolar disease. It is this group about which opinion is divided as to the efficacy of conservative medical management or radical surgical measures.

The last group, and by far the more serious group, is the malignant hypertensive patients in which the diffuse arteriolar disease suddenly becomes accelerated so that the extreme vasoconstriction causes rapid degeneration in the heart, brain, kidneys and arterioles of the body. It is in this group in which necrosis and hemorrhage as described is so prominent. These patients are in an irreversible stage of arteriolar disease and either die of cardiac disease, cerebral disease or uremia.

This classification is the one used mostly by internists and pathologists. Surgeons have based their classification on the immediate operability of the patient and the ultimate reduction in blood pressure and general physical condition of the patient after surgery. Not being a surgeon myself, I will not discuss the surgical aspect of this disease, but I would like to point out that it is too early in the era of vascular surgery to evaluate the ultimate results of sympathectomy, no matter what type of operation is used. I cannot help from feeling that, as is so often the case in medicine, medical men and the surgeons will meet in middle ground somewhere in the management of diffuse arteriolar disease.

It is fortunate in many ways that diffuse arteriolar disease has a rather selected effect upon certain organs of the body; at least it is the effect upon these organs that produces the signs and symptoms which can be related directly to hypertension. These organs are heart, brain and the kidneys. Although the pathologic changes seen in the kidneys are the most intriguing, it is the changes in the heart and brain that kill the vast majority of these patients. Large hypertensive clinics report that relatively few come to their end by renal failure. This is true because functional insufficiency occurs in the heart and in the brain much earlier than it does in the kidneys. The structural alterations seen in the kidneys at the autopsy table are a result of long standing disease, causing slowly progressive vascular obliteration with renal contraction.

In discussing the clinical signs and symptoms of this disease, I would like to emphasize the importance of the pathologic and physiologic changes seen in the heart, brain and kidneys because it is these changes that directly cause the clinical manifestations of the disease.

The manifestations of hypertension vary consid-

erably in patients. One patient may suffer cardiac changes first, while another may complain of symptoms referrable to the nervous system. Patients showing the predominance of cerebral pathologic condition usually will complain first of sensory disturbances. This may be in the form of severe periodic headaches, vertigo or paresthesia in the form of tingling and crawling sensations over the body. On the other hand they may show an increase in general nervous irritability. Many times physicians accuse these patients of being neurotic or going through the menopause when in fact they are suffering from early hypertensive encephalopathy. The sensory disturbances may last from several months to several years before the more serious motor changes appear. The motor symptoms are usually in the form of a localized weakness in one extremity or the other, which is fleeting and transient in character. Occasionally they will have mild convulsive seizures of the jacksonian type. Needless to say, when these motor disturbances appear, prognosis is poor and in spite of all medical management the patient progresses to a cerebral accident. Before leaving the nervous system I would like to mention that hypertension does cause headaches. There have been those denying this. Neurosurgeons have found marked relief from these headaches by sympathectomy done in well selected cases. In fact, many patients receive more relief from the headaches than they do the actual drop in blood pressure.

Another group of hypertensive patients seem to show predominant changes in the heart. The first symptom of cardiac embarrassment in these patients is often overlooked. This is generalized fatigue. This fatigue may precede exertional dyspnea by several months. It is wise therefore to search for cardiac enlargement or electrocardiographic changes in hypertensive patients complaining of extreme fatigue. The next symptom appearing usually is exertional dyspnea followed by paroxysmal nocturnal dyspnea. These symptoms are serious as every physician knows, and the train of events are familiar to all. I believe it is important, however, to realize that the symptoms described are symptoms of left ventricular failure caused by the excessive load imposed upon the left ventricle by the excessive hypertension and, also, the inability of the blood supply to keep up with the rapidly progressive hypertrophy of the muscle mass of the ventricle. This ischemia also explains the frequency of angina in these patients and the ultimate appearance of coronary thrombosis causing death in so many patients. The signs which appear from the changes described are first concentric hypertrophy of the left ventricle, soon followed by dilatation. This causes the classical boot shaped appearance of the heart as seen in the roentgen ray and also the systolic murmur in the mitral area caused by dilatation of the mitral ring. There are two signs which often are overlooked and point to a rather bad prognosis. These are pulses alternans and gallup rhythm. Since the advent of the electrocardiogram, I feel physicians minimize changes found on physical examination; therefore, in this discussion I will not mention the electrocardiographic changes seen.

In the last few years there has been a considerable amount of study done on the changes in renal blood flow seen as a result of arteriolar disease. It is impossible in this short discussion to cover the abnormal physiologic changes occurring in the kidney in diffuse arteriolar disease. Basically, however, it is known that the earliest change in the kidney noted in this disease is constriction of the efferent arterioles leaving the glomerular tufts. This is thought to be a method by which the kidney can maintain the proper filtration pressure in the glomerular tufts. Due to the constriction of these arteries around the tubules, therefore, these structures are the first damaged by ischemia, causing a reduction in the diodrast clearance, which is a measure of the effective renal blood flow. After considerable time, this process is superimposed by similar changes in the afferent arterioles of the glomeruli. This also causes ischemia, and there is a reduction in the filtration rate which is measured by a drop in inulin clearance. It is only after long standing arteriolar spasm that there is enough damage done to the functioning nephrons of the kidney that one finds albuminuria casts, loss of concentrating power and lowered urea clearance. I wish to emphasize here that when one is confronted with a hypertensive case showing these changes, one is dealing with long standing diffuse arteriolar disease.

The clinical signs and symptoms which can be attributed directly to the kidney in this disease are signs of renal insufficiency as outlined and symptoms of uremia of which we are all aware.

The treatment of diffused arteriolar disease is difficult to discuss, primarily because there is no adequate treatment. The fact that there are so many treatments recommended is a confession of the inadequacy of any one. I like to think of the treatment of this disease as divided into two forms: first, the management of the uncomplicated early disease and, second, the treatment of the more advanced form which practically always means managing the complications incidental to the long standing primary disease.

The treatment of early disease is first one of general management including psychotherapy, control of weight gain, sedation and diet. In the last year or two, the treatment of hypertension by diet appears to be important in the form of sodium free diets, popularized chiefly by Kempner of Duke University in his salt free, rice, high carbohydrate diet. The thiocyanates have been used extensively, but late reports are not nearly so enthusiastic as they were a few years ago. Although they may not actually reduce blood pressure, they seem to give symptomatic relief for hypertensive headaches in proper dosages. The blood concentration, however, should be well regulated, ranging from 10 to 12

mg. per cent. The toxicity of the drug should be kept in mind. The surgical treatment of early hypertension I will not discuss but, in well selected cases, it no doubt has a place. Every physician sending a case to a neurosurgeon for this purpose should have the patient well worked up as to the condition of the brain, heart and kidneys.

Treatment of the complications oftentimes yields surprisingly good results. Many hypertensive patients of long standing present a picture of mild congestive heart failure. A study of fluid balance many times will show fluid retention in patients that were thought to have no cardiac complications. Passive congestion of the kidneys adds an increased burden to an already damaged kidney. By removing this added load through the proper use of sodium restriction, diuretics and digitalis actually may lower the blood pressure, as well as give symptomatic relief. Warren and Stead have shown that the initial cause of congestive heart failure may be produced by a defect in the sodium excretion by the kidney. Whether or not clinicians subscribe to one theory or another as to the cause of the many mechanisms responsible for congestive heart failure, it is important that any possible water retention be recognized early for it is in this stage of the disease that the best results are obtained.

In closing, I would like to state merely that there is no absolute cause known for diffuse arteriolar disease. It is also essential that secondary causes for rise in blood pressure be eliminated before management is instituted for essential hypertension or diffuse arteriolar disease.

425 Madison Ave.

DISCUSSION

Question: I would like to hear something about pheochromocytoma, and a new drug which is supposed to be used in the treatment of this condition.

DR. LOYD: I know nothing about any new drug for the treatment of this adrenal tumor. This tumor, which the doctor mentioned is, of course, one of the primary causes of hypertension, although I do not believe it is common. Recently there has been a test devised for the detection of this tumor. It consists of giving a small dose of histamine, subcutaneously, thereby causing a stimulation in the output of adrenalin by the adrenal gland. This, in turn, causes a marked rise in blood pressure. It has been found that these tumors are rich in adrenalin, therefore, these people secrete a large amount, causing pallor, sweating and a great rise in blood pressure. Needless to say, this test should be used with a great deal of caution.

TOM E. SMITH, M.D., Dallas, Texas: Will you give the latest work on the effect of nicotine on hypertension?

DR. LOYD: There is no doubt but that nicotine has a pressor effect in experimental animals. Dr. Paul White of Boston feels that this is also true in human beings. There is no doubt but that some people tolerate nicotine more than others. In trying to answer Dr. Smith's question, I would like to mention a recent work, the source of which I cannot remember at present, in which temperature studies were done on extremities of animals before and after controlled doses of nicotine were given. The conclusion was that there was a definite lowering in the temperature of extremities which, of course, represents blood supply in the animals, after the use of nicotine.

VERN T. BICKEL, M.D., Lamar: I would like to ask about the routine use of nitrites with reference to essential hypertension.

DR. LOYD: I think we have been overridden by detail men in the suggestion that all of us give nitrites and so forth for the treatment of hypertension. It has been shown in any large hypertensive clinic like the New York City University Clinic that they have a transient and temporary effect. Personally, I have tried in my own office nitrites alone, nitrites combined with barbital, and phenolbarbital alone, with little difference in the response. In such a disease, in which the psychosomatic factor is involved, it is difficult to evaluate accurately any treatment. My personal belief is that nitrites have little effect in the long range treatment of hypertension.

SURGERY FOR FACIAL PARALYSIS DESCRIBED BY CHICAGO DOCTOR

Several technics for the surgical repair of facial paralysis are described by Paul W. Greeley, M.D., Chicago, in the current issue of the *Archives of Surgery*, published by the American Medical Association.

Facial paralysis may result from injury to the seventh, or facial nerve. This nerve may be damaged in several ways, including skull fracture, bullet wounds, injury from a mastoid operation or tumors on the nerve.

According to Dr. Greeley, the best method of repair involves surgery of the injured nerve, with the intention of permitting the face to gain motion again. This may include the sewing together of the ends of the lacerated nerve trunk or the grafting of part of one nerve to another to fill in a gap if the injury has made one.

The uniting of one nerve to another, which has been used several times in the treatment of facial paralysis, is undesirable, the report says, because "the associated movements involved in trying to move the facial muscles are awkward and frequently more conspicuous than the original facial paralysis."

When nerve surgery cannot be undertaken, the article says that "the simplest and most satisfactory plastic surgical correction is obtained by supporting the paralyzed face with strips of autogenous fascia lata."

This procedure involves transplanting the strips of tissue under the skin from the muscle of the temple, down the side of the face and to the muscle underneath the lip.

This in itself will not make the face active again, as in the nerve surgery procedures, but will improve the appearance of the patient and increase his comfort. Some activation may be obtained, however, by supplementing the fascia lata operation with one of the muscle transplanting procedures.

According to Dr. Greeley, the ultimate success or failure of these plastic surgical operations "depends largely on the intelligence of the patient and his willingness to practice movements of facial expression before a mirror until he has educated himself on how to utilize the muscles in their new locations."

PSYCHIATRIC ASPECTS OF CARCINOMA OF THE PANCREAS

GEORGE ULETT, M.D., *St. Louis*
AND
E. H. PARSONS, M.D., *St. Louis*

The emotional aspects of cardiac decompensation, thyrotoxicosis and several other pathologic entities are now reasonably well established, but the psychiatric factor in pancreatic disease has been little considered. Recently three cases have been seen of carcinoma of the pancreas in which the earliest symptoms were psychiatric and only after prolonged study, observation and, finally, direct examination pathologically or surgically was the diagnosis of carcinoma of the pancreas made. Study of the records of eighty-four cases of primary carcinoma of the pancreas seen at the Barnes Hospital during the last fifteen years showed an additional six cases in which the psychiatric aspect seemed important. Thus in this material 10 per cent (nine of eighty-seven cases) of the cases of carcinoma of the pancreas presented a psychiatric problem of some importance and in the three seen by us was a major problem in the differential diagnosis. Unlike the emotional complication of various other somatic disorders in which psychiatric symptoms occur only after organ dysfunction is established and the patient is conscious of a physical threat, in carcinoma of the pancreas the psychiatric picture may develop prior to any clinical evidence of impaired pancreatic function or palpable abdominal mass.

The psychiatric aspect of pancreatic disease is overlooked in current textbooks but it has been previously recognized. Yaskin,[1] in 1931, presented four cases of carcinoma of the pancreas in which the earliest symptoms were those of mental disease. Latter and Wilbur[2] presented three cases of a similar nature seen at the Mayo Clinic. An earlier review of eighty-eight cases of carcinoma of the pancreas at that clinic[3] showed eight in which the leading symptoms were "a general decline in health and nervousness." Rickles[4] in 1945 added two more cases of carcinoma of the pancreas to the literature and also presented a case of chronic pancreatitis in which the patient was "morbidly and profoundly depressed." Kant[5] reported a case in which the diagnosis of pancreatic disease was not only unsuspected before death but in which the patient was given electric shock treatment and later psychotherapy with some apparent improvement of his psychiatric condition before sudden death from pulmonary embolism following widespread metastasis of carcinoma of the pancreas.

In the three cases which were encountered recently, carcinoma of the pancreas has presented the clinical picture of agitated depression. It should be noted that each of these cases was referred after exhaustive negative clinical studies by medical and surgical associates.

From the Department of Neuropsychiatry, Washington University School of Medicine and the McMillan Hospital of the Barnes Hospital Center, St. Louis.
Read before the Missouri Association for Neurology and Psychiatry, St. Louis, March 14, 1948.

CASE PRESENTATION

Case 1. A 41 year old white man entered the hospital on February 14, 1946. His chief complaint of constant severe midepigastric pains began in September of 1945. The pain was "drawing and pulling," caused aching in his thoracic cage and changed to a feeling of heavy weight in the midepigastrium when the patient was lying down. Prior to onset of this pain, the patient had never had any serious illness. There was no nausea or change in bowel habits and appetite was good. In October of 1945, the patient was studied in a hospital where a laparotomy was performed and a normal appendix removed. By November, he had lost 20 pounds in weight, had been advised by his physician that his pain was due to nervousness and in January of 1946, entered the medical service of Barnes Hospital. Complete medical studies revealed no evidence of organic pathologic condition. The patient was seen by several psychiatric consultants. Diagnoses of simple depression and agitated depression were considered in the differential diagnosis and the patient was discharged from the hospital on February 5. He was given psychotherapy and followed in the outpatient department until admission to the neuropsychiatric service of the hospital. Physical examination upon this admission revealed a slender, well developed, well nourished man who appeared younger than his stated age. Temperature was 37 C., pulse 80, respiration 18, blood pressure 150/90. During the interviews, he appeared to be in great discomfort, writhing in his chair, pressing one thigh against his abdomen, rubbing his abdomen and, occasionally, bursting into tears over the hopelessness of his health. He complained a great deal and was constantly demanding "easing" medicine. Latency of responce was normal to greatly prolonged with little spontaneity of speech. There was no evidence of hallucinations or delusions. His thoughts were concerned mainly about whether or not we could do anything to give him relief. Examination of the sensorium revealed no abnormalities. Remainder of the examination was essentially normal. Laboratory examination showed red blood cells 4.97, Hb. 14.6 gm. or 94 per cent, white blood cells 12,200. There was some hyperchromia of the red blood cells. Urine examination was normal. The stool was Guaiac positive. Blood Kahn reaction was negative. The blood amylase on February 9, 1946, was 188 units per cent; on March 3, 1946, it was 150 units per cent. Subsequent stool examinations revealed Guaiac tests from 4+ to a slight positive. The insulin tolerance test was nonrevealing. During the early part of hospitalization, he was given insulin therapy, nine treatments in all and allowed to remain in coma for about half an hour. There was no change in symptoms and the patient was then given six electric shock treatments with grand mal reactions. During the hospitaliza-

tion, psychiatric investigation, including amytal interviews, was attempted with but little success, although the patient was able to express some bitterness over his domestic situation and some hostility toward his wife. It was felt that his early history indicated some suggestive obsessive-compulsive tendencies and trend toward meticulous behavior. He was discharged on March 21, 1946, somewhat improved after a moderate gain in weight and was beginning to make plans for the future. One month later he was admitted to another hospital with severe abdominal pain. There was a total weight loss of 40 pounds at that time with nausea and bloody vomitus. Temperature was 100 F. and a mass was palpable in the epigastrium extending to the right 10 cm. below the costal margin. He died suddenly on the fourth hospital day. Autopsy diagnosis was primary carcinoma of the head of the pancreas with metastases to liver, diaphragm, renal and splenic capsule, mesentery and cervical nodes. A benign adenoma of the adrenal of no clinical significance also was observed.

Case 2. A 56 year old white male entered on December 6, 1946, with a chief complaint of intractable pain in the back, abdomen and left flank, anorexia and 50 pounds weight loss in nine months. He was nervous, worried about himself and complained of insomnia. Constipation had increased in severity two months prior to hospital admission. Medical studies at other hospitals including gastrointestinal and spine roentgenograms had revealed no localizing disease. General health prior to the present illness had been excellent and the patient had led a vigorous life until his retirement from an executive position one year prior to hospital admission because he "just couldn't go on any longer." After his wife's death many years ago, the patient had become emotionally dependent upon his mother and his daughter. With his mother's death two years prior to the onset of the present illness and his daughter's marriage and removal to a distant city, the patient lost himself in a terrific push of work in war projects. With the return of his younger partners from the armed services, there was much friction between them and the patient until he retired from business. At that time his cousin, to whom he was quite attached, was found to have an inoperable cancer of the pancreas. The patient was greatly disturbed by this and began to complain of "the same pains she has." He entered the hospital with a chief complaint of, "Doctor I have a cancer of the pancreas just like my cousin Mrs. S——, but no one will believe me." Upon examination, the patient appeared chronically ill with evidence of weight loss. He lay in bed half propped up, his leg and right hand trembling. He was belching, hyperkinetic and nervous, appeared anxious and a little depressed and puzzled. "This is terrible. I don't know how I can stand it." He was unable to localize the pain in his abdomen and also stated that the pain was in his back. He seemed to forget the abdominal pain as he tried to localize the back pain. Later, he complained of blurring vision. The liver was down one finger breadth and the prostate was slightly enlarged. Otherwise, the physical examination was normal. Laboratory data revealed red blood cells 4.04, with slight anisocytosis, white blood cells 7,200, Hb. 11.8. Cerebrospinal fluid examination was negative with a pressure of 120 mm., 5 lymphocytes, negative Wassermann, and spinal fluid protein 28. The icterus index was 53 units. Blood protein was 5.2 gm. per cent. The direct van den Bergh was 4.4, the indirect 1.3. Stool and urine examinations were normal except for occasional red blood cells in the urine. Blood count was normal and the blood amylase was 68 units per cent. Diagnosis of agitated depression was made and the patient was given supportive insulin therapy administered before meals. His insomnia did not respond to heavy sedation. The patient's depression continued and he expressed the desire to die. He stated, "want to take a long last flight and rid this old wreck of all this pain and misery." By December 21, the patient seemed somewhat more cheerful, less tense and restless. He had gained 7 pounds in weight by the last of January; however, he was definitely jaundiced and the diagnosis of carcinoma of the head of the pancreas was considered. He expired on February 5. Autopsy revealed a primary carcinoma of the tail of the pancreas, involvement of the spleen, left adrenal gland, periaortic and portohepatic lymph nodes, with obstruction of the common bile duct.

Case 3. A 66 year old white female entered the hospital on January 8, 1948. Her chief complaint was 30 pounds weight loss, anorexia, depression and intractable insomnia. These symptoms had been present in increasing severity for six months prior to admission. She is said always to have been cheerful and active until the onset of the present illness. There were no precipitating events, the patient "just went to pieces nervously." She complained of crawling sensations in the lower abdomen, felt jittery and cried frequently prior to hospital admission. There was no family history of nervous or mental disease. On examination, she was a severely depressed person who writhed and twisted in bed, crying bitterly. She made such statements as, "Now look at the world. It's all so hopeless, and I'm so sick." The patient presented considerable confusion and complained of difficulty in concentration "because of the depression. It makes everything blue and hopeless, Doctor. Can anything ever be made well again?" Her liver was down two finger breadths, sharp edged and questionably tender. Blood pressure was 200/110. She is said to have had high blood pressure and infrequent vertex headaches since 1925. The impression was that of agitated depression. Laboratory data revealed red blood cells 4.58, Hb. 13.5, white blood cells 12,350. Urinalysis and stool examinations were normal. The blood Kahn was negative. Nonprotein nitrogen was 15, fasting blood sugar 132, total protein 5.5 with albumin 3.4 and globulin 2.1. The cephalin flocculation test was negative. Electrocardiogram was normal, chest and skull roentgenograms were normal. Gastrointestinal and gallbladder findings were within normal limits. Blood amylase was 53 units per cent. The patient was explored surgically at which time a large inoperable carcinoma of the pancreas with multiple metastasis was found.

A review of the clinical records of cases of carcinoma of the pancreas seen at Barnes Hospital over a period of the last fifteen years revealed a total of eighty-four cases. In six of these cases, psychiatric factors were recorded as follows:

Case 1. A 45 year old white female, complained of a nervous condition and weakness and suffered from a "nervous breakdown" prior to hospitalization, with insomnia, nervousness, low back pains and jaundice. Surgical diagnosis from biopsy was carcinoma of the head of the pancreas.

Case 2. A 48 year old white male, had a "nervous breakdown" six months prior to hospital entry. His

complaints had been treated as functional. He became more irritable and nervous than usual, lost interest in things, had insomnia, epigastric pain and a tendency to increased worrying three months prior to hospital entry. At that time, he was diagnosed as having neurasthenia by a private physician and sent to a local sanitarium. He became jaundiced a few weeks prior to death. Autopsy diagnosis was carcinoma of the body of the pancreas with metastases.

Case 3. A 66 year old white male, had complaints of anorexia, insomnia, fatigue and "a feeling of upset," followed, a month prior to entry, by vague stomach trouble. The home situation is said to have been intolerable and the diagnostic impression included gastrointestinal malignancy (?), depression (?), cerebral arteriosclerosis (?) and anxiety state brought on by irritable home situation. The autopsy diagnosis was carcinoma of the body of the pancreas with liver metastasis.

Case 4. A 30 year old white male complained of nervousness while at work as a boiler-maker six months prior to hospital entry. He then became irritable, complained of a feeling of fullness in the epigastrium, had abdominal pain and weight loss six weeks before hospitalization. He became jaundiced four weeks before hospital entry. Surgical diagnosis was carcinoma of the head of the pancreas with liver metastasis.

Case 5. A 39 year old white male had a seven months' history of backache. Four months' history of vague abdominal pain led to an appendectomy. Following this, the patient took increasing doses of sedative and entered Barnes Hospital in a state of delirium. There all medications were taken away and the patient developed what was termed an "exhaustive psychosis." He was sent to a sanitarium. Two months later, he died and autopsy revealed carcinoma of the head of the pancreas with liver metastasis.

Case 6. A 61 year old white male had dyspepsia for a year. Five months prior to hospital entry he had fatigue, weight loss and change of bowel habits. The patient was described as whining and hypochondriacal and was suspected of having a "strong psychic element" in his disease. Autopsy revealed carcinoma of the head and body of the pancreas.

DISCUSSION

The diagnosis of carcinoma of the pancreas is extremely difficult to establish by clinical means now available. As Eusterman and Wilbur[3] have pointed out, the reasons for this diagnostic difficulty are largely due to the fact that the organ is deep-seated, rendering it comparatively inaccessible to palpation, to surgical intervention or to roentgenologic studies. They further observed that there may be little or no gross evidence of impaired function even in the advanced stages of disease of the pancreas. In view of these difficulties, the early appearance of psychiatric symptoms in many of these cases takes on added significance lest the possibility of organic disease be entirely overlooked. The symptoms as observed and reported in carcinoma of the pancreas by several workers consist primarily of depression, intractable insomnia and agitation. In the Mayo Clinic cases previously presented, 10 per cent of the patients presented initially symptoms included under the heading of "general decline and nervousness." A review of the literature reveals only ten cases of carcinoma of the pancreas with significant psychiatric symptoms reported heretofore. Our study confirms the Mayo Clinic data and suggests that these cases may occur more frequently than diagnosed.

At the outset of this study it was hoped to clarify the psychiatric syndrome seen in these cases and to determine whether the presenting symptoms of depression, agitation and intractable insomnia preceded or followed the severe abdominal pain noted so uniformly by these patients. In those which we have been able to study carefully, the presence of abdominal pain coincided quite closely with the psychiatric syndrome. In cross-section, these patients presented nothing psychiatrically which in any way differed from that of rather classical agitated depression. We were struck however by the frequent observation in these patients that the underlying personality was that generally accepted as stable and, although there were psychogenic possibilities in each case, these were not outstanding. In case 3, for example, it was concluded, "This is not a patient whom we would expect to develop such a psychiatric syndrome." None of these patients were particularly rigid and, differing from one of those reported by Yaskin, there were no significant situational factors which appeared sufficient to produce the syndrome observed. The uniform complaint of these patients was that the physicians were not able to understand that the pain was real and that they were being considered as neurotic or "imagining." This point has been stressed in the report by Rickles, who has pointed out that probably many patients have "departed harassed by the disbelief" of doctor and family that their complaints had organic basis. The need for careful pathologic study of cases of agitated depression is, thus, clearly indicated.

Shock therapy has been used in some of these patients. This therapeutic approach although based upon an erroneous diagnosis and of no therapeutic help had no deleterious effect upon the patients. The effect upon the psychiatrist upon postmortem dénouement is another matter.

The cause of the psychiatric syndrome observed in these cases is not known. Yaskin, in his initial report, discussed the cause in terms of the James and Lang theories and suggested that the visceral dysfunction produced in reverse an emotional disturbance. He further mentioned Head's early contribution concerning pain arising in the viscera and referred to the body wall as a possible cause of depression and anxiety. Neither of these proposed explanations is satisfying. The studies of DeJong,[6] pointing to hepatic metabolic dysfunction in relation to some schizophrenic symptoms, may be pertinent to the problem presented in these cases. This is suggested indirectly by the observation of Gildea and his coworkers[7] on the influence of serum lipoids on affect.

Measures of organ dysfunction such as clinical

jaundice or alteration in blood amylase were without significance in our cases. We found, however, that careful psychiatric study of the patient longitudinally was helpful in diagnosis. A careful determination of the total life behavior pattern as well as the cross-section syndrome in patients in the carcinoma age group was of assistance in pointing the way diagnostically. If the patient so studied presented a psychiatric syndrome characterized by depression, agitation and intractable insomnia together with severe abdominal pain with radiation to the back, and the life history revealed a stable underlying personality, the diagnosis of pancreatic pathologic condition required consideration. It was upon these criteria that we were able to suggest the possibility of a diagnosis of carcinoma of the pancreas prior to operation in case 3.

SUMMARY

Three cases of carcinoma of the pancreas characterized by early neuropsychiatric symptoms recently observed are reported. In addition, the clinical records of eighty-four cases of carcinoma of the pancreas seen at Barnes Hospital were studied with a finding of psychiatric symptoms of varying degrees of clinical significance in six cases.

The psychiatric syndrome observed in these cases is characterized by depression, agitation and intractable insomnia.

Studies of the underlying personality and total life behavior pattern in these cases of carcinoma of the pancreas, in which psychiatric symptoms were a presenting complaint, revealed no significant "neuropathic traits."

In the presence of depression, agitation and intractable insomnia in patients 40 years of age or more in whom there is persistent abdominal pain with radiation to the back, the diagnosis of pathology of the pancreas, probably malignant, should be considered.

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DIGITALIS

THOMAS S. FLEMING, M.D., *Moberly, Missouri*

THE PURPOSE of this paper is to review some of the more practical phases of digitalis and not to attempt to advance any new facts. It often is advisable to refresh one's mind with information already available.

Digitalis has been known for centuries and it is one of the most useful drugs. Its use demands a great deal of skill, power of observation, keen interest and experience. There is no doubt but that it is often abused. To perceive its practical use is the important thing.

ACTION

A detailed account of the pharmacologic action[1] of digitalis is beyond the scope of this paper but the main actions on the heart will be reviewed. These effects are narrowed down to three definite actions, the understanding of which greatly simplifies the indications and contraindications for its use.

These three actions are: First, it depresses the function of the sinoauricular and auricular-ventricular nodes. Second, it depresses cardiac conduction throughout the heart muscle and increases the refractory period of both auricles and ventricles. This depression is particularly marked in the bundle of His. Third, it increases the tone and strength of the heart muscle by direct action on the muscle.

To apply this knowledge in the use of digitalis, I will review some of the more common heart conditions requiring the drug. The first action is mostly vagal. This is definite as it may be stopped with atropine. This first effect of the drug on the pacemakers enters little or not at all into therapy, but it should be known for it explains some of the by-effects of the drug. In other words, one does not give digitalis simply to slow a regular heart. It is not used in such cases as fast heart action in hyperthyroidism, nervousness, toxic states, as in pneumonia or any tachycardia unless there is definite evidence of failure and then in guarded doses. There are, however, certain functional tachycardias, such as paroxysmal auricular tachycardia with no evidence of failure which digitalis often corrects. This action is not entirely clear. It probably has something to do with the stimulation of the carotid sinus and its relations.

In regard to the second action, there is some question as to how the impulses of a fibrillating auricle are prevented from reaching the ventricles. It is thought that up to a certain dosage there is a

From the Woodland Hospital and Clinic.
Read before the Chariton-Macon-Monroe-Randolph County Medical Society, March 11, 1948.

vagal action. It has been the impression of most investigators, however, that the main action is the effect on the bundle of His because it, too, is composed of heart muscle tissue which shares the same cardiotonic effect of digitalis as does the remainder of the myocardium. Then there are physiologists who believe that the greater action, especially in auricular fibrillation, is direct cardiotonic action on the auricular muscle itself, causing a block within the auricle by increasing its tone, enhancing the block. Regardless of the controversy, slowing of the ventricular rate is one of the outstanding results of digitalis action in auricular fibrillation. And whether the action is vagal or extravagal is of academic interest. It has been established, however, that larger doses definitely make the action extravagal. It is well to know this because, when the patient is resting, there may be enough digitalis dosage and action of only vagal nature to correct the fibrillation but, when the patient begins to exercise, the vagal action may be lost and larger doses be necessary to assure extravagal effect.

Also, under the second action, digitalis is indicated in auricular flutter. With proper dosage, the perfect mechanism in the auricles is changed to the imperfect mechanism, auricular fibrillation, and then a possibility that it might be corrected to normal rhythm.

There are conditions in which digitalis is contraindicated under this action, but only the major one will be mentioned. In all forms of heart block, it should not be used. It is well to keep in mind that in complete block, if there is ventricular failure, digitalis is indicated, and should be used.

The third action is most important. Digitalis has been shown definitely to have a direct action on the heart muscle itself and is indicated in all forms of heart failure in which there is muscle weakness. By this direct action, definite and sustained increase in the systolic force is produced. Be sure that there is decompensation and then be sure to give digitalis.

DIGITALIS GLYCOSIDES[2]

Although there is still a great deal of basic work, both pharmacologic and clinical, to be done on the cardiac glycosides, one can predict safely that in the not too distant future all digitalis therapy will be given as the purified crystalline glycosides. There are still good clinicians who believe in the whole leaf, advocating that the combination of the various constituents of the whole leaf has certain advantages; and most agree that the same results are obtainable with both preparations, but the trend seems to be toward the glycosides, mostly because of their simplicity compared to the whole leaf.

Despite an enormous amount of labor, the chemical problems in connection with digitalis are not completely solved, and, for this reason, it has been difficult to isolate the ideal preparation. For clinical reasons, some prefer one product over another because of a certain absorption, or elimination or toxicity. However, each year brings definite and valuable information.

From digitalis purpurea, the most easily separated and most popular glycoside, is digitoxin. The others are gitoxin and gitalin but neither of these are used. From digitalis lanata is derived, Lanatoside A, B and C, a digitoxin, gitoxin and digoxin, respectively. One notes the similarity of these constituents, but some have reason to believe, because, as was mentioned before, there are advantages of one preparation over the other. This last factor will be mentioned later.

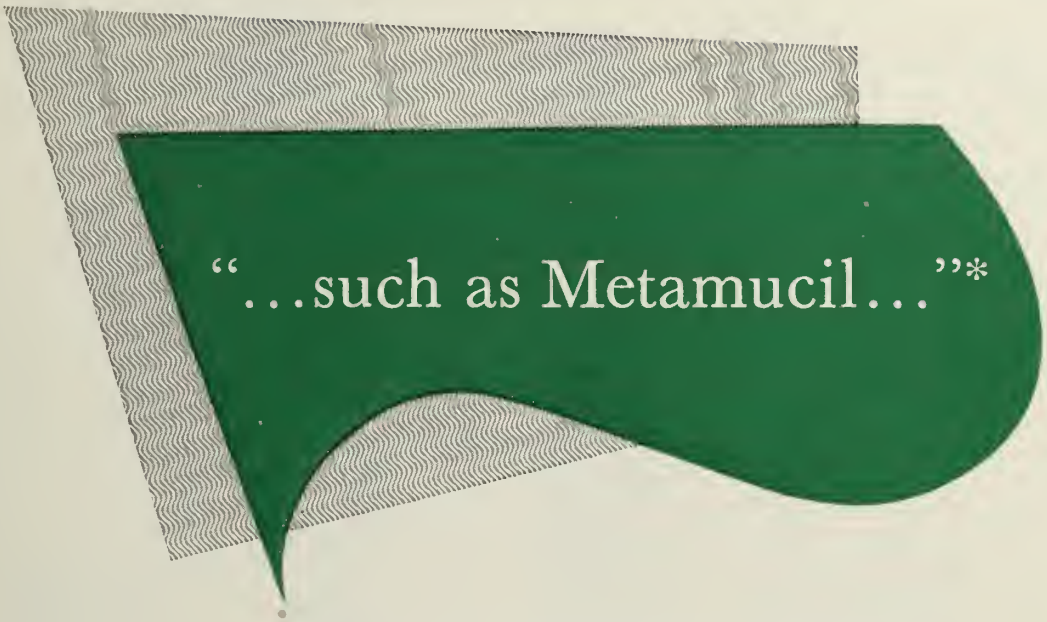
It is well to clear up the word "glycoside" as it is often confused with glucoside. In the past when only the whole leaf was used, the various constituents were spoken of as glucosides because by the process of hydrolysis in making these constituents, they contained a glucose radical. Now the term "glycoside" is applied to this group of digitalis substances which upon hydrolysis will yield any sugar. This is a general name for the group, irrespective of the sugar present, and the term "glucoside" is reserved as a specific name for those digitalis substances, the sugar constituent of which is glucose. Since the essential sugars in the cardiac glycosides are desoxy and not glucose, although glucose may occasionally be present, the correct name is a "cardiac glycoside," and not "cardiac glucoside" as the term was formerly used in the broad sense.

DOSAGE[3]

It might be argued, why discuss dosage of the whole leaf preparations, because many think that soon only the purified glycosides will be used. This may not be final and it is well occasionally to review the methods of administration. More or less elaborate rules based upon the weight of the patient have been devised to estimate the dose of digitalis to be given, but such figures are at best only suggestive due to individual susceptibility to the drug. It will be recalled that Eggleston in 1915 proposed that to digitalize a patient, give 15 cat units per 100 pounds of body weight. Now it is known how unsatisfactory this method could be due to the variations of the cat unit. But in 1924 Eggleston and associates established the oral dose as 1.2 grams or 18 grains of the whole leaf as bioassayed by the U. S. P. XI. This is roughly 1½ grains or .1 gram per twelve pounds of body weight.

Seldom does the urgency require the entire dose. It is best to give half the estimated quantity, and then six hours later, if there are no toxic effects, give one fourth of the estimated amount. Subsequently, one eighth of the total amount is given every six to eight hours until desired therapeutic or toxic effects become apparent.

As a rule it requires about 18 grains to digitalize the average patient. One may give 9 grains for the first dose and proceed as outlined. In six hours give 4 grains and then 1½ grains every six to eight hours until the patient is digitalized. Following this, the average dose is 1½ grain every twenty-four



For the treatment of the spastic colon the author suggests diet, elimination of the nervous element and "bulk producers." As examples of these he lists "agar-agar, in finely powdered form, in flakes, or in cereal-like form; derivatives of psyllium seed, such as Metamucil . . . . "*

METAMUCIL "SMOOTHAGE" IN CONSTIPATION

—"encourages elimination by the formation of a soft, plastic, water-retaining gelatinous residue in the lower bowel."†

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

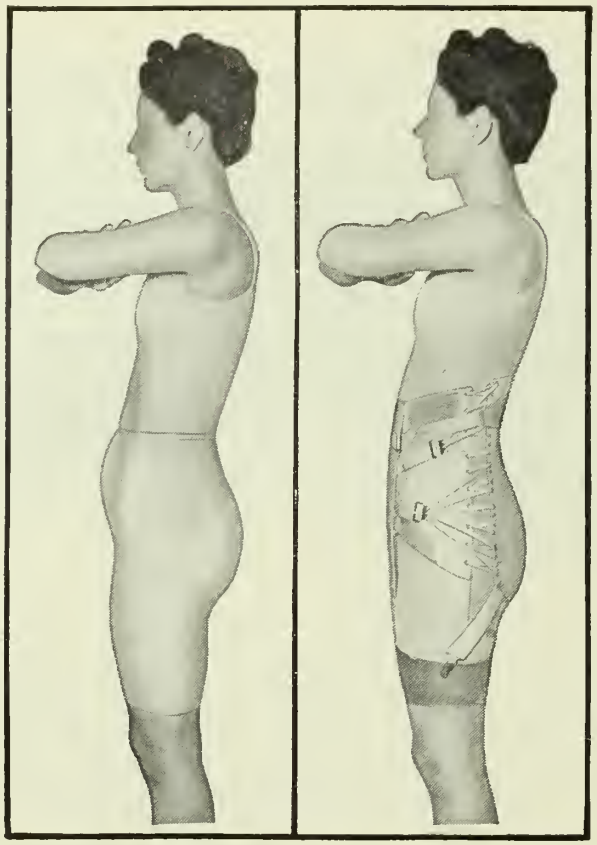
Metamucil is the highly refined mucilloid of Plantago ovata (50%), a seed of the psyllium group, combined with dextrose (50%) as a dispersing agent.

SEARLE RESEARCH IN THE SERVICE OF MEDICINE

Metamucil is the registered trademark of G. D. Searle & Co., Chicago 80, Illinois.

*Glafke, W. H.: Spastic Colon, M. Clin. North America 26:805 (May) 1942.

†Council on Pharmacy and Chemistry: New and Nonofficial Remedies, 1947, Philadelphia, J. P. Lippincott Company, 1947, p. 320.



Patient of intermediate type of build; roentgenograms showed spondylolisthesis, grade 1, with congenital defects. Symptoms developed after a fall on the ice during pregnancy.

Same patient after application of support. Patient reported relief from pain which was confined to the back and called attention to the ease and comfort in the wearing of the support.

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hours. In spite of all these suggested amounts, a large majority of patients will get relief quickly enough by giving only 1½ grains every six to eight hours until results are obtained. Only give the larger doses in the urgent case.

The dosage of the various glycosides is somewhat confusing. When prescribing the whole leaf, one did not expect the results and effects to be so exacting, because the powdered leaf had at least three different cardiac glycosides, each one of which has a different chemical, physical and pharmacologic property, such as variations in absorption, elimination and toxicity. But when giving the glycosides, one might expect to get definite and known effects. Then to complicate the dosages of the glycosides, the three most popular, namely, digitoxin, Lanatocide C and Digoxin vary in absorption, elimination and toxicity.

As a basis for dosage, digitoxin will be described. It will help a great deal to remember the doses of the various glycosides if one will simply think in terms of grams when giving the whole leaf and a corresponding number in milligrams when prescribing the glycosides. For example .1 gram of the whole leaf equals in potency .1 milligram of digitoxin. So, in order to digitalize with the glycoside, 1.25 mg. to 1.50 mg. would be ordered as compared with 1.25 grams to 1.50 grams of the entire leaf. The subsequent doses are about the same. As a rule the maintenance amount is a little larger because the elimination of the glycosides is faster. It may take .2 milligrams or more to maintain the desired effects.

Digitoxin is the most popular at present. Many firms manufacture it and sell under their particular trade name. However, the name digitoxin is always placed on the bottle. At present it is placed on the market in two sizes, namely .1 milligram and .2 milligram.

The other glycosides, Digoxin and Lanatocide C, are becoming more and more popular. Lanatocide C may not be used as much as formally because of its 20 per cent absorption when given orally as compared to digitoxin which is 100 per cent when given by mouth. On the other hand, digoxin is used more, not only because it is absorbed as readily as digitoxin, but is eliminated sooner, avoiding prolonged toxic effects when present. The dosage of digoxin is recommended as a little higher then digitoxin because of this faster elimination. Then, to review the dosages, the daily average would be for digitoxin, .1 to .2 milligrams; for lanatocide .5 milligrams and for digoxin .25 milligrams.

Until the various glycosides become better known it is recommended that either digitoxin or digoxin be the glycoside of choice for oral administration. There is this warning, since the absorption is faster and more complete, the mistake must not be made and give .2 milligrams when .1 milligram is all that is required, and the amount which, as mentioned before, is equal in potency to 1½ grains of the whole leaf.

Toxic Effects

Intelligent administration has made it possible for one to digitalize the patient successfully without waiting for toxic effects, but these toxic effects should be recognized for, unless they are, it has often led to serious, and even fatal, effects. Nausea and vomiting are the most common toxic manifestations. These may be preceded by anorexia, headache and vertigo. In addition, there may be diarrhea, mental confusion and delirium, especially in senile patients. Also, some cases have color vision abnormalities, visual spots, scotomata and temporary blindness. Objectively, there may be neuralgias, particularly of the trigeminal nerve, progressive muscle weakness and malaise, and skin eruptions.

It might be well to expand a little on the effect of the toxic dose on the gastrointestinal tract. It may be difficult to differentiate between a toxicity and anorexia, nausea and vomiting, secondary to local congestion affecting the liver and those organs supplied by the vagus nerve. One readily realizes how serious this would be, when the dose should be increased and it was reduced because toxicity was suspected. So it behooves one to use every factor at his command to make a correct interpretation.

The changes in the electrocardiogram are not necessarily to be discussed under the heading of toxicity but it might help one to evaluate the amount administered. It is known that digitalis can make an electrocardiogram simulate almost any abnormal cardiac condition. However, there are certain definite characteristics as a result of digitalis, and these are recognized easily by the cardiologist. Because of this, and with the symptoms, and a rather characteristic electrocardiogram, one should be able to state if the patient is toxic and has had enough digitalis.

If signs of toxicity are present, the drug should be stopped for at least twenty-four hours or until signs disappear.

A general discussion would not be complete without applying some of this knowledge in a more practical way. Several manifestations of heart disease were mentioned when describing the action of digitalis, but there are other conditions in which it is indicated. A descriptive outline follows:

Auricular Fibrillation.—It might be worth while to mention that digitalis usually is indicated in organic heart disease and quinidine in functional heart disease. For example, digitalis would not be indicated in fibrillation with a toxic goiter unless there was present congestive failure and evidence of organic disease.

Congestive Failure.—This always calls for digitalis. It means that the heart muscle has failed and because of the direct action of the drug, it must be given. There may be cases as in coronary occlusion in which the administration must be used cautiously, as it will be recalled that patients with coronary arterial disease are less tolerant to digitalis.

Paraxysmal Auricular Tachycardia. — Recently the intravenous use of Lanatocide C has given perfect results in those obstinate cases which were not relieved by the simpler methods. It was administered in doses of .4 milligrams. It is well to carry several ampules in the medical kit. Premature beats often are relieved by digitalis. Of course overdosage will cause premature beats but there are cases in which all methods fail and digitalis will eliminate the abnormal focus.

Therapeutic Test.—When it is uncertain whether or not there is a slight degree of congestive failure, as in the case of the old person with slight dyspnea on exertion, or victims of chronic pulmonary emphysema with a higher degree of dyspnea than is readily attributable to the lung condition alone, and of patients with massive pulmonary embolism, and other tests are not available, digitalis is helpful.

Tonic Doses.—Small doses are often useful for mild cardiac impairment, associated with renal disease and the senile heart. All should be warned not to give the older patient large doses of digitalis. Their conduction system is extremely sensitive.

Left Ventricular Failure.—Moisture may not be elicited in the lungs but the only complaint may be dyspnea. However this heading should come under muscle weakness and heart failure. Cardiac asthma, especially nocturnal dyspnea too, should come under the caption of heart failure; however digitalis is often helpful.

Delaying Heart Failure.—As a means of delaying or warding off heart failure, in patients with large hearts and heart strain, tonic doses are indicated. These doses must be small, for example, .1 mg. of digitoxin every two or three days.

Surgical Operations. — Unless there is present some of these conditions, digitalis is not used in the preparation of surgical patients.

Postoperative Case.—Digitalis is not used in collapse during or following anesthesia unless there is definite heart muscle failure. Toxic states with fast heart action do not require digitalis. This applies to cases of pneumonia, infectious diseases and such.

In conclusion, if one will acquaint himself with the pharmacologic action and dosages of the various preparations, and apply fundamental principles, this important drug, digitalis, will not be abused but will be put to a useful purpose.

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DOCTORS SAY BONE BANK HAS GREAT POSSIBILITIES

Bone preserved in a frozen state for weeks is of "definite value" in bone-grafting operations, Dr. Leonard F. Bush, Danville, Pa., and Dr. C. Zent Garber, of New York, writes in the June 12 issue of *The Journal of the American Medical Association.*

In an article entitled "The Bone Bank," the two doctors say that "if foods, serums and other perishable substances could be kept in a low temperature freezing cabinet, we decided that perhaps this method could be used to preserve bone so that a constant supply would be available at all times."

Experiments were undertaken and it was found that human bone can be preserved apparently indefinitely in a freezer at minus 20 to 30 centigrade.

"Spinal fusions for scoliosis and disorders in the lower part of the back, the filling of large bone cysts and the replacement of defects in bone are a few of the common problems in which large quantities of bone are necessary," the doctors state in their article.

The doctors, in their experiments, used large chinchilla rabbits. Control studies were made. Thirty-two bone transplantations were made by twenty-eight operations on nineteen animals. There were no casualties and in only one wound was there a superficial infection.

The experimental bone-grafting studies on rabbits showed that freezing at low temperature is a safe method of prolonged preservation of bone for grafting purposes. Bone grafts three to six weeks after implantation proved successful. Some of the bone used had been frozen from twenty-eight to eighty-four days.

"Having proved that this method of preserving bone was successful in animals, we felt it was safe to attempt it in man," the article says. "Thus all available clean fresh bone was placed in bottles and frozen at minus 25 degrees centigrade. Because infection developed in one case, the bone is now kept for two weeks before using, while the donor remains under observation for evidence of developing wound infection."

The doctors explained that by "exercise of diligence," considerable bone may be accumulated from many sources.

In discussing the clinical results, the doctors state that homogenous bone has been used in 126 operations in 104 patients. "Of these, twenty-four operations were by direct transfer; refrigeration at plus 2 to plus 5 C. was used in thirty-seven instances, and the bone was stored in deep freezer for forty-three operations."

In the 104 cases in which donor bone was used, there were only four complications. "The donor bone," the article says, "furnished a framework for the formation of new bone by substitution and by furnishing the necessary calcium for this new bone."

In discussing the paper, Dr. J. R. Cobb says that from his experience at the Hospital for Special Surgery in New York bone can be kept indefinitely if it is kept constantly at a sufficiently low temperature without contamination and sealed.

FAVORABLE RESULTS OF SURGERY ON "BLUE BABIES" REPORTED

"Tremendous improvement" in the condition of thirty-nine children who underwent heart surgery to relieve the so-called "blue baby" condition is reported by Willis J. Potts, M.D., and Stanley Gibson, M.D., of Children's Memorial Hospital, Chicago.

Writing in *The Journal of the American Medical Association,* they say that "of 41 patients who have survived surgery, 39 have been tremendously improved; i. e., they are relieved of cyanosis, have gained weight and are able to live fairly normal lives."

The operation described by Drs. Potts and Gibson is designed to increase the oxygenation of the blood stream by increasing circulation through the heart.

As described, the procedure remains substantially the same as that outlined in the Nov. 16, 1946, issue, except for "slight modifications in technic" and "clarification of misunderstood points."

PRESIDENT'S PAGE

The Woman's Auxiliary of the Missouri State Medical Association is embarking on a project which in time may prove to be one of the cornerstones in the improvement of rural medical service.

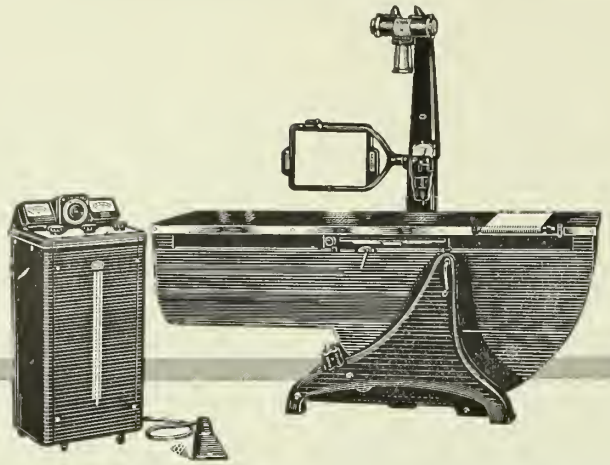


The Auxiliary will launch a Student Loan Plan for Medical Students as soon as minor details are worked out.

Loans will be available to Missouri boys and girls who desire to study medicine. Special consideration will be given to boys and girls from rural areas and especially those who indicate a preference to practice in rural Missouri following completion of their training.

This project has the complete approval of the Council of the Missouri State Medical Association. As soon as possible all details of the plan will appear in THE JOURNAL. All members of the Association are urged to help when called upon.

Robert Mueller M.D.



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JULY, 1948

EDITORIALS

INTRODUCING INTERNS AND RESIDENTS TO RURAL PRACTICE

Today interns and residents, during their medical training period, hear little about the opportunities and advantages of rural practice. Most of them receive their training from medical schools located in cities, from hospitals located in cities and under instructors who are specialists. Such a situation is not conducive to interesting young physicians in rural practice.

What can be done about this situation in Missouri was a question members of the Committee on Rural Medical Service of the Association pondered for some time before launching a project.

The Committee in cooperation with the Jackson County Medical Society arranged an evening meeting on May 18 of all interns and residents of the hospitals in Kansas City and St. Joseph. The meeting was held at General Hospital No. 1 in Kansas City and began with a complimentary steak dinner.

"Rural Medical Practice" was presented as a panel discussion. Four young physicians from rural Missouri participated on the panel with Robert Mueller, M.D., St. Louis, President, serving as moderator. The panel members were selected to represent rural medical practice under varying conditions. One member was from a town of 1,800 population with the closest hospital thirty miles distant; another from a town of 600 population with good hospital facilities; another from a town of 3,200, practicing in a partnership, with good hospital facilities ten miles distant, and another from a town of 6,100 with a group practice set-up and good hospital facilities. Those taking part in the panel were Arie C. Van Ravenswaay, M.D., Boonville; J. L. Washburn, M.D., Versailles; William Lytle, M.D., Waynesville; Don Robinson, M.D., Slater. One hundred two attended the meeting.

The interns and residents were invited to present written questions concerning rural practice that they had in mind. The moderator requested a certain member or members of the panel to answer from their personal experience. Many more questions were asked than could be answered during the time allotted. Some of the questions asked and discussed follow:

Does one ever hesitate to refer patients to larger towns for fear of losing them?

To what extent does the public recognize the specialty boards?

What are charges in rural practice?

What constitutes adequate equipment?

Does one dispense his own drugs? If so why and, if not, why?

How does one get hospital connections?

How does one arrange for days off, vacations and postgraduate study?

Why do physicians like to practice medicine in rural Missouri?

What particular type of cases, occurring frequently, give the most concern?

How can a young doctor best find a rural community which will suit his desires and which needs his services?

The comments of many of those present indicated that this was a most practical type of meeting and should be promoted in other medical training centers.

DEATH RATES IN 1947

The death rate from all causes among United States life insurance policyholders reached a new low in 1947 at 737.9 per 100,000, with declines shown for practically all causes of death including heart disease and cancer, the Life Insurance Association of America reports. The 737.9 rate compares with 773.1 in 1946 and 763.9 in 1942, the previous lowest rate. These results are indicated by the experience of companies representing 73 per cent of the ordinary and industrial life insurance policies in force in all United States companies.

Heart diseases of all kinds constituted the leading cause of death among policyholders last year. Nearly half of all the deaths included in the survey were attributed to heart diseases, cerebral hemorrhage and nephritis together making up the principal diseases in the group. The combined death rate from these causes in 1947 was 361.5 per 100,000 policyholders. This was about 1 per cent lower than the corresponding rate in the previous year, due chiefly to improvement among industrial policyholders. If the 1947 rate is taken as indicative of experience among all policyholders it may be estimated that approximately 600,000 policies became claims from the principal cardiovascular-renal diseases last year.

Cancer, the second leading cause of policyholder deaths, also declined during 1947, the first drop in several years. The 1947 death rate of 114.8 compares with 116.9 in the previous year and 106.8 in 1942. Cancer deaths terminated an estimated 200,000 life policies last year.

Practically all the other important death causes showed a lower rate in 1947. The accident death rate among policyholders last year was 45.8 per

100,000 compared with 49.3 in 1946 and 53.3 in 1942. The death rate from tuberculosis declined to a new low of 26.1, nearly one quarter lower than that for 1942.

The death rates differ between ordinary and industrial life insurance policyholders. In almost all cases, the death rate is higher for the industrial life insurance policyholders than for ordinary insurance policyholders. In the cases of tuberculosis and diabetes, the industrial rate is strikingly higher.

NEWS NOTES

Burford G. Hamilton, M.D., Richmond, recently was elected president of the Richmond Rotary Club.

E. R. King, M.D., Nevada, was a recent speaker before the Nevada Rotary Club. He spoke on cancer.

Delbert P. Johnson, M.D., St. Joseph, was a recent speaker before the St. Joseph South Side Lions Club.

Edward G. Claiborn, M.D., Camdenton, was praised in an article appearing in the Camdenton *Reveille* upon the occasion of his starting his fifty-third year of practice in Camden County.

Evarts A. Graham, M.D., St. Louis, appeared on the program of the American College of Chest Physicians in Chicago, June 17 to 20, and spoke on "Problem of Cancer of the Lung."

DEATHS

Winningham, William H., M.D., Trenton, a graduate of Marion-Sims College of Medicine, 1893; honor member of the Grundy-Daviess County Medical Society and former president; aged 80; died April 30.

Love, Joseph W., M.D., Springfield, a graduate of Columbia University College of Physicians and Surgeons, New York, 1890; Past President of the Missouri State Medical Association; former president and secretary and honor member of the Greene County Medical Society; aged 81; died May 3.

Myer, Max W., M.D., St. Louis, a graduate of Marion-Sims College of Medicine, 1899; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 70; died May 16.

Stewart, James, M.D., Jefferson City, a graduate of Barnes Medical College, 1895; Fellow of the American Medical Association; honor member of the Cole County Medical Society; former State Health Commissioner; aged 74; died May 18.

Lund, Herluf G., M.D., St. Louis, a graduate of Washington University School of Medicine, 1907; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 66; died May 26.

MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER CLINIC

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for July and August, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

July 2: Gynecology and Genitourinary.
July 7: Skin.
July 9: Breast.
July 14: Skin.
July 16: Cervix.
July 21: Gastrointestinal.
July 23: Head and Neck.
July 28: Skin.
July 30: Skin.
August 4: Skin.
August 6: Gynecology and Genitourinary.
August 11: Skin.
August 13: Breast.
August 18: Gastrointestinal.
August 20: Cervix.
August 25: Skin.
August 27: Head and Neck.

SOCIETY PROCEEDINGS

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

Chariton-Macon-Monroe-Randolph County Medical Society

With George W. Hawkins, M.D., Salisbury, presiding, the Chariton-Macon-Monroe-Randolph County Medical Society met at the Woodland Hospital, Moberly, with seventeen members present.

The minutes of the previous meeting were read and approved.

The film, "Problem Child," was shown. It was introduced and discussed by F. A. Barnett, M.D., Paris.

A second film, "Management of the Failing Heart," was shown and discussed by Drs. J. Will Fleming and T. S. Fleming, Moberly.

A motion was passed that the Society have one regular meeting each month as in the past and an additional meeting for audiovisual educational purposes, with the exception of the month of December.

The Society adjourned until September since no meetings are held during the months of June, July and August.

A buffet luncheon was served.

F. A. Barnett, M.D., Secretary.

North Central Counties Medical Society

The North Central Counties Medical Society met in regular session in Milan on May 6 at 7:30 p. m. at the office of J. S. Montgomery, M.D.

The minutes of the meeting of February 5 were read and approved.

The application of Milton T. English, M.D., for membership was approved by the censors and he was elected a member.

Upon motion of S. L. Freeman, M.D., Kirksville, and

seconded by J. S. Gashwiler, M.D., Novinger, a vote of thanks was given to A. F. Miller, M.D., the former secretary, for years of faithful service to the North Central Counties Medical Society.

Lt. Col. Val E. Miltinberger, M.C., spoke on "The U. S. Army Doctor."

Capt. Clifford E. Henery, M.C., spoke on "Geriatrics."

Both papers were interesting and were discussed by those present.

Those present were Drs. J. S. Montgomery, Milan; Warner Herington, Green City; J. H. Holman, Unionville; E. A. Montgomery, Unionville; S. L. Freeman, J. Ben Jones and Ralf Hanks, Val E. Miltenberger and Clifford E. Henery, Kirksville; J. S. Gashwiler, Novinger.

Meeting of June 3

The North Central Counties Medical Society met at the Jackson Cafe in Unionville at 6:30 p. m. on June 3.

C. R. Bruner, M.D., Columbia, spoke on "Points of Interest to the General Practitioner in the Treatment of Eye, Ear and Nose."

M. Pinson Neal, M.D., Columbia, discussed "Diagnoses Commonly Missed in General Practice."

Both papers were instructive and received the member's thanks.

The application of G. R. Hudson, M.D., by transfer from Kane County Medical Society, Illinois, being approved by the censors, was acted upon and Dr. Hudson was made a member.

Those present were Drs. Ida Nulton, Lancaster; Warner Herington, Green City; S. L. Freeman, J. Ben Jones, Ralf Hanks, G. R. Hudson, Kirksville; J. H. Holman and A. E. Montgomery, Unionville; P. V. Hart, Coatsville; J. S. Gashwiler, Novinger; Raymond McIntyre, St. Louis.

J. S. GASHWILER, M.D., Secretary.

FOURTH COUNCILOR DISTRICT

St. Louis County Medical Society

The St. Louis County Medical Society held its regular meeting on April 14 at 8:30 p. m. at the Health Center, St. Louis County Hospital, Clayton.

The minutes of the meeting of March 24 were read and approved.

Dr. Schattyn requested the cooperation of the members in the preparation and delivery of medical papers on the KXLW radio program. Dr. Levey stated that from five to six pages of double spaced typewritten material was necessary to provide the 13 to 14 minutes reading time available for the program.

Dr. Schattyn reported that he had received a report from the Society's Health and Public Policy Committee disapproving the proposed American Red Cross Blood Bank program. Upon motion the Society approved the report.

Dr. Sutter suggested that the Society hold a picnic next fall for members and their immediate families. Upon motion this was approved.

Dr. Roland M. Klemme, St. Louis, spoke on "Protruded Intervertebral Disk." He stressed the importance of myelography for accurate diagnosis and localization of protruded intervertebral disks and expressed a conservative attitude toward operative intervention in disk cases, especially when compensation factors were involved. The paper was discussed by Drs. Hampton, Holscher, Levey, Sutter, Whitener and Tashma.

Upon motion of Dr. R. B. Denney, the speaker was given a rising voice of thanks.

Meeting of April 28

The St. Louis County Medical Society met on April 28 at 8:35 p. m. at the Health Center, St. Louis County Hospital, Clayton.

The minutes of the meeting of April 14 were approved as read.

Dr. Teiber reported that the first postwar revival of the yearly boat excursions on the Steamer Admiral would be held on June 17.

Dr. Ralph A. Kinsella, St. Louis, spoke on "Recent Concepts in Certain Allergic Diseases." He emphasized certain basic factors in the consideration of lupus erythematosus, rheumatic fever, sulfonamide sensitivity, rheumatoid arthritis, scleroderma and subacute bacterial endocarditis. Drs. Jensen, Nakada, Steiner, Nemours, Backlar, Skinner, and Magness joined in the active discussion which followed Dr. Kinsella's interesting presentation.

ROBERT C. KINGSLAND, M.D., Secretary.

NINTH COUNCILOR DISTRICT

South Central Counties Medical Society

The South Central Counties Medical Society met for dinner on May 21 at the Antlers Cafe, Mountain Grove, with the following members and visitors present: J. R. Mott, M.D., Hartville; J. A. Fuson, M.D., Mansfield; E. G. Beers, M.D., Seymour; L. T. VanNoy, M.D., Norwood; R. A. Ryan, M.D., H. G. Frame, M.D., R. W. Denney, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, Jr., M.D., Cabool; T. J. Burns, M.D., Houston; C. F. Callihan, M.D., Willow Springs; E. C. Bohrer, M.D., and Rollin H. Smith, M.D., West Plains; Lee Hoover, M.D., W. P. Maddox, M.D., and T. E. Ferrell, Jr., M.D., Springfield; M. Pinson Neal, M.D., Columbia, and Mr. Raymond McIntyre, St. Louis.

The meeting was called to order at the home of Dr. Denney by Dr. Callihan, the president.

The minutes of the last meeting were read and approved.

Upon motion it was voted to place R. M. Norman, M.D., Ava, on the honor roll in recognition of his more than thirty years of faithful membership and his recent blindness and retirement from practice.

Dr. Neal read a most instructive paper on "Diagnoses Frequently Missed in General Practice" which made all realize how much can be overlooked and reminded of what old old dean used to say, "Art is long and time is fleeting."

Mr. McIntyre made a few remarks and a vote of thanks was given to him and Dr. Neal for their contributions to an excellent meeting.

The meeting adjourned to meet in Mountain Grove on June 18.

A. C. AMES, M.D., Secretary.

Ninth Councilor District

Fifty physicians and guests attended a meeting of the Ninth Councilor District at the Edwin Long Hotel, Rolla, in the afternoon and evening, May 28.

The scientific program in the afternoon consisted of the following discussions:

"The Management of Common Skin Diseases," Arthur W. Neilson, M.D., St. Louis.

"The Use of Glandular Substances in Female Disturbances," Richard Paddock, M.D., St. Louis.

"The Treatment of Burns," B. L. Sinner, M.D., St. Louis.

At the conclusion of this practical and informative program, those present enjoyed a pleasant social hour preceding a bountiful trout and ham dinner.

The evening session included some timely remarks by Robert Mueller, M.D., President of the Association, and Mr. William W. Crowdus, Instructor in Medical Jurisprudence, Washington University School of Medicine, and attorney, who spoke on "The Legal Aspects of the Practice of Medicine."

E. C. Bohrer, M.D., Councilor.

MISSOURI STATE MEDICAL ASSOCIATION

Ninetieth Annual Session

St. Louis

March 14, 15, 16, 17, 1948

MINUTES OF THE HOUSE OF DELEGATES

Crystal Room, Jefferson Hotel

Sunday Session

The first meeting of the House of Delegates of the Ninetieth Annual Session of the Missouri State Medical Association was called to order at 2:00 p. m., March 14, in the Crystal Room, Jefferson Hotel, St. Louis, with Ralph E. Duncan, M.D., Kansas City, Speaker, presiding.

Officers, Councilors and Delegates were present during the Annual Session as follow:

Officers

President.....Morris B. Simpson, Kansas City
President-Elect.....Robert Mueller, St. Louis
Secretary.....W. A. Bloom, Fayette
Treasurer.....C. E. Hyndman, St. Louis
Editor.....G. V. Stryker, St. Louis
Vice President.....O. T. Blanke, Joplin
Vice President.....S. M. Bailey, Malden
Vice President.....Donald M. Dowell, Chillicothe

Councilors

1st District.....H. E. Petersen, St. Joseph
2nd District.....W. F. Francka, Hannibal
3rd District.....J. W. Thompson, St. Louis
4th District.....Otto W. Koch, Clayton
5th District.....J. F. Jolley, Mexico
6th District.....R. W. Kennedy, Marshall
7th District.....C. Edgar Virden, Kansas City
8th District.....Wallis Smith, Springfield
9th District.....E. C. Bohrer, West Plains
10th District.....Frank W. Hall, Cape Girardeau

Delegates

First District

Buchanan.....F. J. Berney, St. Joseph
Buchanan.....L. P. Forgrave, St. Joseph
Buchanan.....Walter R. Moore, St. Joseph
Caldwell-Livingston.....D. M. Dowell, Chillicothe
Clay.....M. O. Langhus, N. Kansas City
Harrison.....W. A. Broyles, Bethany
Mercer.....R. B. Bristow, Princeton
Nodaway-Atchison-Gentry-Worth.....Henry C. Bauman, Maryville
Nodaway-Atchison-Gentry-Worth.....Emmett B. Settle, Rock Port
Nodaway-Atchison-Gentry-Worth.....Leo F. Wallace, Stanberry

Second District

Adair-Schuyler-Knox-Sullivan-Putnam.....J. S. Gashwiler, Novinger
Chariton-Macon-Monroe-Randolph.....F. A. Barnett, Paris
Chariton-Macon-Monroe-Randolph.....F. L. Harms, Salisbury
Chariton-Macon-Monroe-Randolph.....Howard Miller, Macon
Chariton-Macon-Monroe-Randolph.....A. P. Rowlette, Moberly
Lewis-Clark-Scotland.....P. W. Jennings, Canton
Lewis-Clark-Scotland.....J. R. Bridges, Kahoka
Marion-Ralls.....B. L. Murphy, Hannibal
Pike.....Wm. B. Wilcoxen, Bowling Green

Third District

St. Louis City.....Carl J. Althaus, St. Louis
St. Louis City.....George A. Carroll, St. Louis
St. Louis City.....E. Lee Dorsett, St. Louis
St. Louis City.....Edwin C. Ernst, St. Louis
St. Louis City.....Armand D. Fries, St. Louis
St. Louis City.....R. Emmet Kane, St. Louis
St. Louis City.....Charles L. Klenk, St. Louis
St. Louis City.....William B. Kountz, St. Louis
St. Louis City.....Curtis H. Lohr, St. Louis
St. Louis City.....Neil S. Moore, St. Louis
St. Louis City.....Arthur W. Neilson, St. Louis
St. Louis City.....John F. Patton, St. Louis
St. Louis City.....F. G. Pernoud, St. Louis
St. Louis City.....Jacob G. Probstein, St. Louis
St. Louis City.....M. J. Pulliam, St. Louis
St. Louis City.....A. J. Raemdonck, St. Louis
St. Louis City.....Llewellyn Sale, St. Louis
St. Louis City.....Victor E. Scherman, St. Louis
St. Louis City.....Robert E. Schlueter, St. Louis
St. Louis City.....P. C. Schnoebelen, St. Louis
St. Louis City.....A. J. Signorelli, St. Louis
St. Louis City.....Jerome I. Simon, St. Louis
St. Louis City.....Henry P. Thym, St. Louis

Fourth District

Franklin.....Herbert H. Schmidt, Washington
Lincoln.....J. C. Creech, Troy
St. Charles.....Lawrence Behan, St. Charles
St. Louis.....Clyde P. Dyer, Webster Groves
St. Louis.....T. H. Hale, St. Louis
St. Louis.....Julius Jensen, St. Louis
St. Louis.....James R. Meador, Clayton
St. Louis.....Martyn Schattyn, Kirkwood

Fifth District

Audrain.....Fred Griffin, Mexico
Boone.....A. R. McComas, Sturgeon
Callaway.....W. J. Cremer, Fulton
Cole.....M. W. Kelly, Jefferson City
Cooper.....Arie C. Van Ravenswaay, Boonville
Howard.....M. P. Leech, Fayette
Miller.....W. L. Allee, Eldon
Moniteau.....John P. Burke, California
Montgomery.....E. J. T. Andersen, Montgomery City
Morgan.....J. L. Washburn, Versailles

Sixth District

Cass.....David S. Long, Harrisonville
Johnson.....T. Reed Maxson, Warrensburg
Pettis.....A. J. Campbell, Sedalia
Saline.....G. A. Aiken, Marshall
Vernon-Cedar.....C. B. Davis, Nevada

Seventh District

Jackson.....V. B. Buhler, Kansas City
Jackson.....F. A. Carmichael, Jr., Kansas City



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● Nothing is left to chance in the production of Penicillin Abbott. Numerous tests—138 in all—are made on such factors as potency, sterility, pyrogens, toxicity, penicillin G content, heat stability, pH, moisture content, solubility and crystallinity. These 138 Abbott tests, exclusive of those conducted by the Food and Drug Administration, make it possible for you to use Penicillin Abbott *with confidence*. Such dependability makes Abbott Penicillin Products a reassuring choice—whether your prescription calls for penicillin in cartridges, vials, troches, tablets, *Dulcet** Tablets or ointments. If you wish descriptive literature, just drop us a line. ABBOTT LABORATORIES, NORTH CHICAGO, ILLINOIS.

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Jackson	Ralph E. Duncan, Kansas City
Jackson	H. L. Dwyer, Kansas City
Jackson	B. Landis Elliott, Kansas City
Jackson	R. Lee Hoffman, Kansas City
Jackson	John S. Knight, Kansas City
Jackson	H. C. Lapp, Kansas City
Jackson	A. N. Lemoine, Kansas City
Jackson	Richard L. Sutton, Jr., Kansas City
Jackson	Vincent T. Williams, Kansas City
Jackson	A. M. Ziegler, Kansas City

Eighth District

Barton-Dade	Vern T. Bickel, Lamar
Dallas-Hickory-Polk	Olin A. Griffin, Buffalo
Dallas-Hickory-Polk	W. W. Tillman, Jr., Bolivar
Greene	Paul F. Cole, Springfield
Greene	Thomas E. Ferrell, Jr., Springfield
Greene	Francis T. H'Doubler, Springfield
Greene	Walter S. Sewell, Springfield
Jasper	O. T. Blanke, Joplin
Jasper	B. E. DeTar, Joplin
Newton	C. C. Cardwell, Stella
Ozarks	George Newman, Cassville
Ozarks	Stanley D. Roper, Ozark
Ozarks	Kenneth Glover, Mount Vernon
Ozarks	H. L. Kerr, Crane
Ozarks	J. M. Threadgill, Forsyth
Webster	E. G. Beers, Seymour

Ninth District

Carter-Shannon	T. W. Cotton, Van Buren
Laclede	J. H. Summers, Lebanon
Phelps-Crawford-Dent-Pulaski	R. E. Breuer, Newburg
South Central	Rollin H. Smith, West Plains
South Central	Leslie Randall, Licking
South Central	Homer G. Frame, Mountain Grove

Tenth District

Butler	H. M. Henrickson, Poplar Bluff
Dunklin	E. L. Spence, Kennett
New Madrid	John J. Killion, Portageville
Pemiscot	W. R. Limbaugh, Hayti
Perry	Jerome Bredall, Perryville
St. Francois-Iron-Madison-Washington-Reynolds	W. Harry Barron, Fredericktown
St. Francois-Iron-Madison-Washington-Reynolds	Andrew Bugg, Ellington
St. Francois-Iron-Madison-Washington-Reynolds	Ben M. Bull, Ironton
St. Francois-Iron-Madison-Washington-Reynolds	H. M. Roebber, Bonne Terre
Scott	W. O. Finney, Chaffee
Stoddard	Neal J. Touhill, Dexter

Speaker: Members of the House of Delegates, Ladies and Gentlemen, will you please come to order, and will you stand while the Reverend Charles F. Rehkopf, Pastor of St. John's Episcopal Church, St. Louis, delivers the Invocation?

Rev. Rehkopf: All Merciful God and Heavenly Father, we beseech Thee for all that minister to the sick and the suffering, especially we pray for the doctors here assembled. Vouchsafe for them Thy protection and care wheresoever they may serve, in home or hospital, if it be in war, or in areas of sudden disaster, give them skill and courage, patience, love and self control and guide their deliberations that they may bring to all who are ministered to by them the sense of Thy Companionate Presence. This we ask in the Name of Him who healed the sick, Thy Son, Our Savior, Jesus Christ, Amen.

Speaker: It is now my pleasure to introduce to you the Honorable Henry S. Caulfield, a former Governor of our Sovereign State, at present Director of Public Welfare for St. Louis City; he has always been a friend of organized medicine; he appears today as a representative of Mayor Kaufman to welcome your presence here. The Honorable Caulfield.

Honorable Caulfield: Mr. Speaker, and Members of the House of Delegates of the Missouri State Medical Association, it is my happy privilege to welcome you to St. Louis, in the place of our Mayor. I was designated, I assume, because in the course of my service as Director of Public Welfare, I have been considerably exposed to doctors and constantly have witnessed their unselfish devotion and sacrifice. Then, too, I was born and raised, and loved St. Louis, and I have a feeling of deep pride and gratitude to the doctors who are making St. Louis renowned throughout the nation as a great medical and hospital center. Although, because of my experience with hospitals during the war, I feel entirely qualified to participate in the discussion of that paper on headaches to be presented by Dr. Horton tomorrow, I am not going to do it. I am not going to try to tell you how to run your business. I believe I can serve you best by not taking up your valuable time. Ladies and Gentlemen, Doctors all, we welcome you to St. Louis and assure you of our deep appreciation of your having chosen our city as the place for holding this most important meeting, and we wish for you a happy and prosperous convention. I thank you.

Speaker: In order that the work of this House may be dispatched with efficiency the following arrangements have been made. This assembly hall has been divided into two areas, namely, a voting area and a visiting member area. The voting area is divided into sections, one section for each Councilor District, with sufficient chairs for the Delegates and the Councilor of the District. The first three rows are for officers and committeemen. If there is no objection from the Delegates of the House, each Councilor is requested to sit with the Delegates of his District during each session of the House, and perform the following duties: (1) Check the list of delegates of his district, which have been certified by the Committee on Credentials, whenever a roll call is requested by the Speaker, and be prepared to report as to their presence or absence; (2) preserve order in his district's voting area, and be available to assist the Speaker in carrying out the procedure necessary to conduct the business coming before the House. At this time it is requested that Delegates and Councilors change their seating positions, if necessary, to occupy chairs in the designated Councilor District voting area, and that all members not Delegates retire to the visiting member section which is at the rear of the hall.

Speaker: Will the Chairman of the Committee on Credentials give his report?

Armand D. Fries, M.D., St. Louis: The following have presented satisfactory credentials: Officers, four; Councilors, ten; Delegates, seventy-five.

A quorum was shown present upon roll call.

REPORT OF THE GENERAL COMMITTEE ON ARRANGEMENTS

J. W. Thompson, M.D., St. Louis: Mr. Chairman, with the efficient help of our office force we have arranged comprehensive meetings to last until Wednesday after-

noon. The Entertainment Committee is prepared to see that we rest from our labors and enjoy refreshments. Dr. Duncan has been in contact with the office on numerous occasions, so we hope that this Annual Session will be characterized by efficiency and diligence. We wish to welcome you to St. Louis and, on behalf of the State Association, I, as Chairman of the Council, want to express my satisfaction with the efficiency with which the affairs of this organization are conducted. I wish particularly to commend our long-standing and most efficient Business Manager, Miss Helen Penn; her value is untold and we all know and appreciate the many things she has done for all of us, but I want to take this opportunity before you gentlemen to say so out loud. I believe we have built up an excellent organization in the State of Missouri to handle the affairs of the profession in this state; that our Executive Secretary, Mr. O'Brien, and the Field Secretary, Mr. McIntyre, as well as the other employees in the state office, are trying to do a good job for you here. If you have any criticisms, any suggestions, for the good of the order, now is the time to bring them forward and we will humbly accept them and try to carry out your wishes. Thank you very much.

Upon motion the report was adopted.

REPORT OF THE LOCAL COMMITTEE ON ARRANGEMENTS

LLEWELLYN SALE, M.D., St. Louis: The committees have a similar function and my committee has found it rather easy because the work has been directed and largely done by Dr. Thompson and his associated workers. The Entertainment Committee has arranged the entertainment about which you are informed in the program. Further than that, I can only echo the sentiments of Dr. Thompson in hoping that this will be successful and a congenial meeting.

Upon motion, duly seconded, the report was accepted.

The minutes of the last meeting were approved as published in the July 1947 issue of THE JOURNAL.

SPEAKER: If there is no objection, the following procedure will be used in the conduct of the House of Delegates. It in no way conflicts with the Constitution and By-Laws of this Association or Robert's Rules of Order. This procedure is proposed to expedite the business of the House of Delegates. This is the legislative body of the Association. Each of you is a representative of the membership residing in your county, or hyphenated counties. It is the purpose of this meeting to give an opportunity to each to bring here the thinking of the members represented. No doubt, important issues will be presented to you, each of which will have its effect upon the future of the Association. Your thoughts and actions are needed to guide the officers of the Association to carry on in the best interests of our members and the public we serve. In one way this meeting can be different from the previous convention meetings of the House of Delegates; that is, it can resolve to become well informed upon the Association's objectives, the progress made, plans that will be made at this session to further our objectives, and take the word back to each of your 3,383 members, so that they may turn to and help intelligently.

Procedure for the House of Delegates, 1948

1. Excepting the Auditor's report on the financial condition of the Association, all annual reports of the officers, committeemen and the council will be accepted without individual action, and the sponsors of such reports will consider themselves thanked by the members of the House of Delegates for the work they have done.

2. Following the conclusion of each report the members of the House may ask the sponsor of the report for information; however, any Delegate desiring discussion from other members of the House will make a motion on the subject matter, so that it may be properly discussed.

3. Sponsors of reports making recommendations to this House will reduce such recommendations to resolutions in written form, give to the Secretary for presentation to this House and referral to the proper reference committee for consideration and recommendation to this House.

4. All resolutions, amendments or substitute resolutions must be written and handed to the Secretary for presentation to the House. Resolutions must be clear as to intent and methods suggested or outlined, if considered necessary, as to when and how their objectives are to be accomplished. Resolutions may be discussed at time of introduction and prior to referral to reference committee, if such discussion may seem feasible to save time at the Recessed Session on Monday evening, when the reference committees will make their reports.

5. No member of this House shall speak more than once in the discussion of any motion or resolution until other members who desire to discuss the matter have had an opportunity to do so.

If there is no objection, that will be the procedure.

The Speaker appointed the following Reference Committees:

Reference Committee on Amendments to the Constitution and By-Laws

Donald M. Dowell, Chillicothe, Chairman.
V. T. Williams, Kansas City, Vice Chairman.
Jerome Simon, St. Louis.
Rollin Smith, West Plains.
John R. Dixon, Brookfield.

Reference Committee on Resolutions

A. P. Rowlette, Moberly, Chairman.
Victor Scherman, St. Louis, Vice Chairman.
John J. Killion, Portageville.
W. R. Moore, St. Joseph.
B. Landis Elliott, Kansas City.

Reference Committee on Miscellaneous Affairs

T. E. Ferrell, Jr., Springfield, Chairman.
Martyn Schattyn, St. Louis, Vice Chairman.
G. A. Aiken, Marshall.
Emmet P. Settle, Rockport.
R. A. Ritter, Cape Girardeau.

Reference Committee on Medical Education and Public Welfare

H. M. Roebber, Bonne Terre, Chairman.
M. W. Kelly, Jefferson City, Vice Chairman.
Oliver Abel, Jr., St. Louis.
John S. Knight, Kansas City.
B. E. DeTar, Joplin.

Committee on Awards for Scientific and and Technical Exhibits

Arie C. van Ravenswaay, Boonville, Chairman.
H. H. Schmidt, Washington, Vice Chairman.
Vern T. Bickel, Lamar.
C. B. Davis, Nevada.
J. H. Summers, Lebanon.

The President, Morris B. Simpson, M.D., Kansas City, read his Message and Recommendations.

PRESIDENT'S MESSAGE AND RECOMMENDATIONS

In accepting the Presidency of the Association at the last Annual Session there were certain recommendations called to your attention. It was stated that the

health of the people of Missouri is the responsibility of the medical profession and, as such, is the direct responsibility of all members of the Missouri State Medical Association. There are several factors and several specific organizations which are involved and are responsible for achieving the objective for the people of Missouri. The voluntary prepaid plans for hospital and medical services are the means for solving the economic problem of the people. A special committee in the Council of the State Association reviewed the developments of these programs, and submitted recommendations to the Plans in St. Louis and in Kansas City for their correlation. The mutual agreement by these Plans to accept these recommendations has not been achieved and is a decided disappointment. We believe it is a disappointment to the people of Missouri and a partial defeat in achieving our objectives.

Full cooperation with the Veterans' Administration in developing a medical care program was recommended. The Association has cooperated in the development of such a program, and the members of the Association have designated their willingness to participate in the program by their signatures. A complete program was submitted to the Veterans' Administration on a signed contract, signed by officers of the Association.

The State Association has cooperated with the Department of Public Health and Welfare of the Division of Health and Welfare. It has been able to respond promptly to any request for advice and counsel submitted by the Director of the Division concerning problems of health of the people of Missouri. It is recommended that efforts be made for the appropriation by the state of larger amounts, in order that the Division of Health may expand its activities.

The Division of Mental Hygiene and the problem of hospital care for mental patients challenges the medical profession. A special committee of the House of Representatives of the General Assembly submitted reports after investigation and with the support of the medical profession, and its opinion has resulted in further appropriations from the State's Assembly to increase the facilities and to enhance the salary and the housing situation for the personnel of these institutions.

The Missouri Division of the American Cancer Society has been in close touch with the State Association and there has been a reorganization of that activity within the state. The representatives of the medical profession from each of the Councilor Districts are members of the Board of Directors of this organization. The funds derived from the campaign are used within the State of Missouri and 60 per cent of the amount is retained for local use. These allocations are for education and for cancer detection centers. Of the amount returned to the national organization, a goodly portion has been returned to the State of Missouri and allocated for a reserve in accredited medical schools and hospitals of this state. It is incumbent on each practicing physician to cooperate with this organization and particularly exercise extreme care in examination of his patients in order that early suspicious lesions may be detected and the patient receive proper care at an early date.

The State Legislature enacted laws to conform to the Hospital Survey and Construction Act of Congress. A special advisory committee was appointed by the Governor to cooperate with the Division of Health in preparation of the survey. Preliminary reports indicated it is a fair survey and the recommendations are justified by factual information obtained. The report has been submitted to the Surgeon General of the United States Public Health Service for final approval and upon receipt of the approval those communities where preliminary plans have been made will be in a position to complete their final program and proceed with construction of much needed hospitals in rural areas.

Medical education in Missouri is no new problem to the members of the medical profession. We are fortunate that there are two excellent medical schools in the State of Missouri, located in St. Louis. We are to be complimented upon the recognition which they have achieved by the fine reputations of the graduates of these schools.

There is another problem of medical education in Missouri, and that is a four year school of medicine of the University of Missouri. The need for this has been demonstrated by the need for physicians in the rural communities of Missouri which goes hand in hand with the need for hospital facilities. Recent reports by accredited authorities have given factual information concerning the recommendations for this school and the facilities which must be available in order that it may achieve the recognition that is due a University of Missouri School of Medicine. Interpretation of these reports indicates that such a school must be located where there are sufficient doctors of medicine in practice to constitute the teaching faculty, and there must be available the clinical material for teaching. The expense of operation will be a tax obligation on the people of Missouri, and in all fairness to the people of Missouri the location of the school should be at the location where the achievements of an outstanding school can be reached with the lowest expense to the people of Missouri. Young men and women, citizens of the State of Missouri, have been unable to follow education in the profession of medicine because it was not approved at the University of Missouri. They should have this opportunity the same as other citizens of the State of Missouri have an opportunity to study other professions now provided at the University of Missouri.

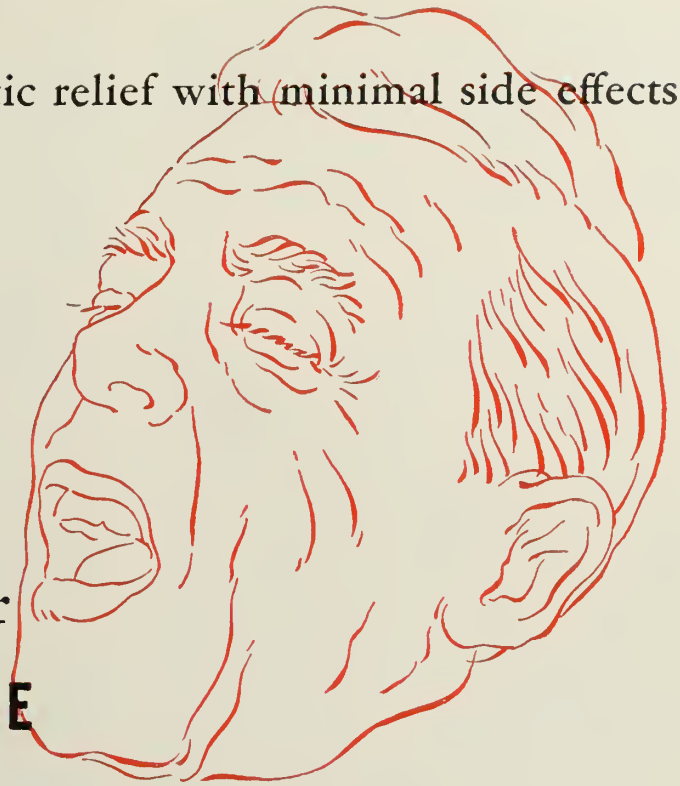
I am happy to inform you that there will be in the near future a conference with the Board of Curators by the Council of the Missouri State Medical Association, and we wait with anxiety their final decision concerning this problem.

The Association established a program of taking the Association to the smaller communities of the state and to the county societies. This has been accomplished through the work of our Field Secretary, Mr. Raymond McIntyre. At this time, I wish to express to you for the Officers and the Councilors, and in behalf of the State Association, our sincere appreciation to Mr. McIntyre for the work that he has done. It has been through his cooperation that district meetings have been held at which there have been presented outstanding scientific programs which have received the approval from those attending the meetings and subsequent meetings have been attended by a greater number of members in those areas. This has resulted in bringing together many physicians and the hyphenation of many counties into larger organizations. This has enabled them to present more attractive scientific programs.

The Association through its Rural Health Committee, with Dr. R. W. Kennedy, of Marshall, as its Chairman, has been the leader in the formation of plans for the Health Council of the State of Missouri. This attracted organizations that are participating in the problems of rural health. The achievement of this objective will enable the interested organizations to correlate their work in rural health and to assist each other in improving the health of the people in the smaller communities of the state, as well as those in the farm areas. It is hoped that this will be a motivating force in the future development of hospitals through the program of the Hospital Survey and Construction Act.

Public relations of the Association were established on a more active basis several years ago and public relations counsel was employed. The program for this activity was outlined and accepted by the State Association. However, the contract with the public relations counsel was discontinued at the last Annual Session. During the last year the activities of the executive offices have constituted the public relations pro-

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1. Arbesman, C. E.: *N. Y. State Jl. of Med.*, 47: 1775, 1947.
2. Loveless, M. H.: *Am. Jl. of Med.*, 3: 296, 1947.
3. Bernstein, Rose and Feinberg: *Ill. Med. Jl.*, 92: 2, 1947.
4. Osborne, Jordon and Rausch: *Arch. of Derm. & Syph.*, 55: 318, 1947.

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gram. The Public Relations Committee will report on this in their annual report. The public relations of the State Association in the future is entirely dependent upon your relationship with your patients, and what they think of you as a doctor of medicine. All of the money that is spent through the media of disseminating articles and publicity is of no value if the individuals composing an organization are not supporting that program by their individual relationships with their patients.

Problems confronting the Association arise at such times that it is an imposition on the Council of the State Association to ask them to make decisions which may vitally affect each individual member of the Association. The American Medical Association has established an interim session of the House of Delegates for consideration of important matters. Our Association is as important as the American Medical Association, and it would seem wise during these times of uncertainty that the House of Delegates of the Missouri State Medical Association should be called together in an official meeting in the fall of the year at a location which could be determined by the Council and Officers of the Association.

The Councilors of the State Association are elected by the Delegates from each Councilor District. These Councilors in turn choose a Chairman of the Council. The Councilors chosen by you elect the Secretary, the Treasurer and the Editor of The Journal of the Association. It is the responsibility of the Chairman of the Council to preside at Council meetings and it is the responsibility of each Councilor to carry out the policies and recommendations that are submitted to the Council through the resolutions adopted by the House of Delegates. The position of Councilor is not an easy position to fill. The meetings should not be considered just a week-end pleasure trip to St. Louis. The Delegates should give grave thought to their choice of councilors and choose men who will give the position the time, the study and the interest required.

The correlation of the activities of the Missouri State Medical Association with the activities of other organizations that have a direct relationship to medical care is important, and must exist in fact as well as in word. These organizations, for example, represent the American Cancer Society, the Mental Hygiene Society, Crippled Children's Association, the Infantile Paralysis Fund and, particularly, the State Hospital Association. There are others in which we should be particularly interested and have a direct relationship with them in supporting their programs and the correlation of their objectives with the objectives of the Missouri State Medical Association. This is particularly a function of the designated committees of the Association.

In closing, I wish to express my deep appreciation to the members of the Council, to the Officers of the Association and to each individual member of the Association for their splendid cooperation and support during the last year. It is my deep hope that what has been achieved, although small in comparison with the need in the State of Missouri, will be a small part of progress and will encourage those who follow to carry on the work of the Association in order that better medical care and the best quality of medical service may be provided for all of the people of the State of Missouri, and that the Missouri State Medical Association will be recognized and go down in history as a leader in achieving its objectives. It is with sincere appreciation that I express my gratitude to the personnel of the executive offices for their sincere and efficient cooperation during my administrative year.

The report of the Executive Secretary follows:

REPORT OF THE EXECUTIVE SECRETARY

It is continuously an inspiration to find the spirit of helpfulness that exists among the officers, Councilors and committee members of the Association. All gave unstintingly of their time and efforts in activities during 1947 devoted to improvement in the practice of medicine and the health of the people of Missouri.

My associates at the office, Ray McIntyre, Helen Penn, Catherine Burnett, Lorraine Kramer and Bertha Thomas represent a most loyal and able staff of persons devoted to your problems. I extend to all of them my sincere thanks for a job well done in 1947.

A program has been arranged for the Annual Session by the Committee on Scientific work which is a bit of a departure from the usual. As expressed by one member "Heretofore, the program was arranged to provide information which we thought would be good for the members." This year the members were asked what kind of a program they wanted. The result will be found in the printed résumé. Excellent scientific exhibits have been arranged. Sixty-six technical exhibits will be shown. Since the revenue received from these technical exhibits goes a long way toward defraying the expenses of the meeting, it is hoped that you will visit these exhibits during the various intermission periods provided for that purpose.

The Bureau of Information which was established early in 1946 continued to function during 1947. Many inquiries have been received from physicians desiring to locate in Missouri or from communities in need of physicians. More detailed information will be found in the report of the Committee on Rural Medical Service.

The Field Secretary continued with the program outlined in 1946 of assisting county medical societies in arranging programs and stands ready to do so in 1948. Councilor Districts 2, 5, 8, and 9 have held their annual meetings and all were well attended.

The hospital survey was completed early in January 1948. The state plan resulting from the survey for the construction of new hospital facilities is expected to be completed prior to the time this goes to press. The Field Secretary assisted the survey committee in completing this work.

The Committee on Nominations which is appointed by the President from the House of Delegates must submit nominations for the following offices:

Three Vice Presidents to fill the vacancies created by the expirations of the terms of O. T. Blanke, M.D., Joplin; S. M. Bailey, M.D., Malden, and Donald M. Dowell, M.D., Chillicothe. Two delegates and corresponding alternates to the American Medical Association to fill the vacancies created by the expiration of the terms of A. R. McComas, M.D., Sturgeon, Alternate, W. A. Bloom, M.D., Fayette; and W. L. Allee, M.D., Eldon, Alternate, M. Pinson Neal, M.D., Columbia.

The terms (two years) of the Councilors of the odd numbered districts expire this year: H. E. Petersen, M.D., St. Joseph, First District; J. W. Thompson, M.D., St. Louis, Third District; J. F. Jolley, M.D., Mexico, Fifth District; C. Edgar Virden, M.D., Kansas City, Seventh District; E. C. Bohrer, M.D., West Plains, Ninth District. Delegates from these districts shall meet on the morning of the third day and elect the Councilor for their District. The election must be certified to the House of Delegates on a prescribed form which will be furnished.

The session will convene for four days beginning Sunday, March 14, at 2:00 p. m. with a session of the House of Delegates, and closing Wednesday afternoon, March 17. A dinner for Presidents and Secretaries of County Medical Societies will be held Sunday evening, March 14. A recessed session of the House of Delegates will be held Monday, March 15, at 4:30 p. m., and the final session of the House will convene at 2:00 p. m., Wednesday, March 17. The Annual Banquet in Honor of Past Presidents will take place Monday evening, March 15, at 7:30 p. m. at the Jefferson Hotel.

Status of Membership

Number of members, January 1, 1947		3,390
New members	210	
Reinstated	16	
Total		3,616
Dropped	87	
Deceased	78	
Transferred	68	
Total, January 1, 1948		3,383

Of this total 319 are Honor Members.

T. R. O'BRIEN, Executive Secretary.

MR. O'BRIEN: The following honor members are eligible for Affiliate Fellowship in the American Medical Association: Drs. Charles T. Reid, Joplin; R. M. Stormont, Webb City; William J. Wills, Springfield; Arnold Traubitz, Leadwood; H. L. Cunningham, G. B. Schultz and C. A. W. Zimmermann, Cape Girardeau; Paul E. Coil, Mexico; James A. Logan, Warsaw; P. S. Tate, Fulton; Walter E. Gibson, De Soto; William M. West, Monett; T. L. Hardin, St. Charles; R. W. Webster, Carthage; J. J. Bansbach and L. C. Bauman, St. Joseph; L. M. Callaway, E. F. DeVilbiss, Frank D. Dickson, E. E. Pickens, Clinton K. Smith, Kansas City; Fred W. Bailey, Vilray P. Blair, Merle Bone, John M. Bradley, Cyrus E. Burford, Edwin D. Edwards, William F. Hardy, Charles H. Neilson, F. Neuhoff, Louis Rassieur, Selden Spencer, Charles Weinsberg, St. Louis.

The report of the Treasurer, C. E. Hyndman, M.D., St. Louis, follows:

REPORT OF THE TREASURER

C. E. HYNDMAN, M.D., St. Louis: The full and complete report of the audit of the books of the Association by R. A. Lennertson & Company, St. Louis, Public Accountants, was not received in time for publication in THE JOURNAL as we should like to do and should be done. To have an audit between January 1 and the time of an early Annual Session is difficult. Mimeographed copies of the audit are in your hands and it will be published in the April issue of THE JOURNAL.

The report of the Committee on Scientific Work, Raymond O. Muether, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE IN SCIENTIFIC WORK

The report of the Committee on Scientific Work is embodied in the program which appears in the March issue of THE JOURNAL. The Committee feels that a practical and valuable program has been arranged and it is hoped that members will gain from the presentations at the sessions.

RAYMOND O. MUETHER, Chairman,
REX L. DIVELEY,
W. A. BLOOM,
VICTOR B. BUHLER,
W. J. STEWART.

The report of the Committee on Publication, G. V. Stryker, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON PUBLICATION

January 1, 1947, to January 1, 1948

The 44th volume of THE JOURNAL was completed with the December issue. During 1947 there were published in THE JOURNAL fifty-four original articles, twenty-eight case reports, two special articles, thirty-seven editorials, one hundred twenty-nine news items, seventeen organization activities, eighteen miscellaneous articles, fifty-three obituaries, fifty-two society proceedings, sixteen Woman's Auxiliary articles, ten abstracts, sixty-seven book reviews. There were 416 pages of reading material and 520 pages of advertising, not including fifty-six additional pages of advertising by inserts.

Advertising in THE JOURNAL from January 1, 1947, to January 1, 1948, earned $25,605.74. Subscriptions of nonmembers amounted to $65.70, making $25,671.44 earned by THE JOURNAL. The cost of production of THE JOURNAL (printing and illustrations) was $13,947.53.

G. V. STRYKER, Chairman,
V. T. WILLIAMS,
DAVID V. LEMONE,
H. E. PETERSEN,
FRED R. FARTHING.

DR. STRYKER: The printed report gives the statistical report on THE JOURNAL but I hope you will be interested in several things which do not appear. During the year the situation on the amount of paper available for use has changed in the last half. The number of original articles, therefore, has been increased by 33 per cent over the first half of the year. This reacts to attract more articles being submitted and allows more careful selection of articles published. We hope that the material appearing in THE JOURNAL has improved. The number of editorials used during the last half of the year increased a little less than the 33 per cent increase in original scientific articles. The Committee on Publications met on September 28, 1947, and several recommendations approved by the Committee have been inaugurated in THE JOURNAL. The President's Page was started with the February 1948 issue. The column, "Musings of the Field Secretary," written by Mr. McIntire, is now appearing regularly. The format has some change which we believe improves the appearance and readability. The titles of articles are now two columns, as well as the names of the author, and the articles are started flush with capital letters, which conforms to the style used by most of the better publications today, not necessarily in the medical field, but also in the literary. We are attempting the improvement of the more personal part of THE JOURNAL, as well as the scientific aspect. More proceedings of societies are being carried and we hope more societies will send in reports of their meetings. Members of the Committee are encouraging all members to send in news of themselves, of their society and of other physicians. The Committee will welcome suggestions at any time, and I would like personally at this time to express publicly my deep appreciation for the untiring and extremely valuable efforts of our efficient Assistant Editor, Miss Helen Penn. Without her, THE JOURNAL would be nonexistent.

The report of the Committee on Public Policy and Public Relations, Robert Mueller, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND PUBLIC RELATIONS

In April 1947 a decision was made by the Council to dispense with the services of Thomas W. Parry Associates as public relations counselors. It was decided further that this work should be done at the Association office and that additional employees be obtained to do this work at the Association office and in conjunction with it. In the meantime this work has been carried on in an efficient manner by the present personnel of the office although it has increased greatly the work of an already overburdened staff.

The following table shows the number of releases and the type of releases done by the office under the new plan:

Releases on county society meetings	667
Releases on Councilor District meetings	184
Releases on Woman's Auxiliary Essay Contest	483
Releases on miscellaneous topics	43

Releases on monthly column (Medical Sidelights)	510
	1,887
Assisted in release sent by Veterans Administration	483
	2,370

It should be realized that this work was in addition to the numerous other duties of the office and that it is appreciated by the entire organization.

Several prospective men have been consulted relative to this job in the Association office but to the present time, none has been employed. It is believed that the filling of this job is an important one and it will probably take additional time in order to secure the proper person to handle such important work.

The Committee, and we are sure the entire membership, realizes the great importance of public relations in medical work and the necessity of continuing this work. It must also be realized, however, that top-heavy expenses in this department can not be borne by the Association and that due consideration must be given to other phases of its work.

Correspondence from other states attests to the fact that Missouri is to the forefront in public relations work and that some of the Missouri ideas are being used by other state organizations.

Robert Mueller, Chairman,
John Growdon,
Arie C. Van Ravenswaay,
Llewellyn Sale,
Frank W. Hall.

The report of the Committee on Defense, C. E. Hyndman, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON DEFENSE

March 1, 1947, to February 15, 1948

Status of Cases

Cases pending March 1, 1947	3
New Cases during the year	1
Cases settled during the year	2
Cases pending February 15, 1948	2

Both cases were settled out of court.

Charles E. Hyndman, Chairman.
Roland S. Kieffer,
L. F. Heimburger,
O. B. Zeinert,
L. P. Forgrave.

The report of the Committee on Cancer, E. C. Ernst, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON CANCER

The most significant accomplishment during the last year in relation to the cancer problem of the State of Missouri has been the formal organization and incorporation and adoption of a temporary set of by-laws for the Missouri Division of the American Cancer Society. Thirty-two members comprise the working group, one half of which are laymen and the other half are medical men. This group is more or less distributed in Councilor Districts of the entire State. Several meetings were held in Jefferson City during the last year and officers of the Missouri Division of the American Cancer Society were elected. Unfortunately, Dr. Robnett, who was chosen president, passed on. Mrs. Seth Thompson, vice president, Madison, is the acting president of the Association; Mrs. Weber, Farmington, is the secretary, and Mr. Eagan, Jefferson City, treasurer. We have an executive secretary, who will comb the state and do the actual rural work, the meetings of the various counties, and he will present this data to the executive committee, which is composed of Mr. Richard Chamier, Moberly; Edgar Eagan, Jefferson City; myself, Robert E. Lee Hill, Columbia; Louis Jorstad, St. Louis; Mrs. Long, Harrisonville; Mrs. Thompson, Madison; Dr. Virden, Kansas City, and Mrs. Weber, Farmington. Robert E. Lee Hill, Columbia, is working out the campaign for 1948 which will begin on April 1. The regional meetings of the field army will be held throughout the state preliminary to the individual county organizations to start the April 1 drive for cancer funds. The Cancer Committee has under consideration many problems and I will briefly go over these ten or eleven problems.

First, we are working on a plan of offering suggestions to the Missouri Division of the American Cancer Society as a committee of the state, namely, cancer seminars that are to be held in the large cities sometime in the near future, perhaps Kansas City and St. Louis, for presenting to the profession recent advances in diagnosis and treatment of cancer, and perhaps some authorities from various sections of the country will be invited to attend for demonstrations and lectures. The State Health Department, Dr. Williams, suggests cooperation with the Missouri Division, and this will be done, certainly with reference to the counselor service for local physicians, trained specialists in cancer. In other words some plan will be worked out to cooperate with the various sections of the state.

The Ellis Fischel Hospital desires a grant of about $25,000.00 for a period of three or four years. I spoke with Dr. Charles Cameron, the acting medical director of the American Cancer Society, in New York last week and that money will come from the research fund of the Cancer Society, not directly from Missouri. There are other fees that might have to be paid out by Missouri. There is a $14,000.00 grant that is requested by the Ellis Fischel Hospital for training fellowship and for other phases of actual cancer work. They also need a statistician. Also there is a cytologic diagnostic development which might be of help throughout the state that we are working on. The tumor diagnostic service at the hospital is to be expanded, which perhaps will cost in the neighborhood of $10,000.00. The annual Tumor Seminar which has been successful in the past will also probably be continued; it costs about $1,500.00. The Kansas City General Hospital has requested $2,000.00 and there are other grants from Kansas City for various other purposes as a detection clinic which will be given consideration. There are certain projects in Springfield and Cape Girardeau to which $5,000.00 is allocated, but as yet this has not been worked out.

I think our executive secretary may be able to go to these various communities and work out the problems. It will be of interest to the cancer problem as a whole, and also be to the best interests of the local medical profession.

Also a study of the various types of cancer clinics, detection and diagnostic combination in relation to their relative value to the larger, as well as the smaller, hospitals of the state, is necessary. The Committee is anxious to increase the number of tumor diagnostic clinics and cancer hospitals throughout the state; otherwise we cannot hope to cope with the indigent cancer problem.

In St. Louis for the last forty-three years the Barnard Free Skin and Cancer Hospital has been active in diagnosis and treatment of cancer for the indigent patient. It also has been interested in cancer research of a type that has been productive to better clinical care of the cancer patient. Perhaps you do not know it, but 65 per cent of the work at the Barnard Hospital is within the greater St. Louis area and is paid for by the Community Chest, and 35 per cent is for outstate patients of the

Eastern half of Missouri. We of the Committee of the Cancer Society in St. Louis, and I am sure also the medical profession, are much disturbed, should Barnard Hospital, as recently reported in newspapers, be vacated and moved to Washington University. Thereby, St. Louis will be losing an independent civic institution for the training of physicians who are not affiliated with the University, and that is an important point, men to be trained who are not affiliated with a university. This probably will be discussed and investigated by the Committee on Cancer in cooperation with the Missouri Division of the American Cancer Society. This is a serious problem in the effort to give diversified service to the indigent patient, both through the medium of affiliated as well as nonaffiliated hospitals.

E. C. ERNST, Chairman,
WILLIAM E. LEIGHTON,
PAUL F. COLE,
E. KIP ROBINSON,
EVERETT D. SUGARBAKER.

The report of the Committee on Mental Health, E. F. Hoctor, M.D., Farmington, Chairman, follows:

REPORT OF THE COMMITTEE ON MENTAL HEALTH

The Committee on Mental Health met on the afternoon of January 31, 1948, at the Coronado Hotel, St. Louis.

It was recommended that the Committee express its thanks to the Council of the Missouri State Medical Association for the interest and support the Council has given in furthering the work of this Committee. Recommendations made one year ago have borne fruit and additional provisions are being made and now being carried out for the care of the aged mentally ill.

We are establishing occupational therapy buildings at state hospitals, provision of adequate living quarters for physicians and other benefits for the personnel are expected under the additional appropriations recommended.

The ever increasing number of aged mentally ill seeking admission to the hospitals has been met partially through new legislation. There will be, however, such numbers of aged insane committed that either the state hospitals will have to provide increased housing facilities or other provision must be made for their care.

The Committee recommends to the Council that the Council continue to fight for legislation and appropriation that will mean that state hospitals will be active treatment centers for the mentally ill, that will guarantee first class care to citizens of Missouri needing their services. This is important when one keeps in mind that probably 90 per cent of the citizens of Missouri who become mentally ill are cared for in state hospitals.

E. F. HOCTOR, Chairman,
PAUL HINES,
ORR MULLINAS,
B. LANDIS ELLIOTT,
FRANK M. GROGAN.

The report of the Committee on Maternal Welfare, E. Lee Dorsett, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON MATERNAL WELFARE

The activities of the Committee on Maternal Welfare have been centered upon the arrangement of an obstetric program for the 1948 Annual Session. A distinguished speaker and selected physicians from St. Louis, Kansas City and Cape Girardeau will read papers before the Association upon the opening day. Physicians from different sections of the state will open discussions on the papers of the essayists.

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BENJAMIN A. RUSKIN, M.D.
LEWIS DANZIGER, M.D.
RUSSELL C. MORRISON, M.D.
E. MADISON PAINE, M.D.
H. GLADYS SPEAR, M.D.
ARTHUR J. PATEK, M.D.

G. H. SCHROEDER, *Business Manager*

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This Committee recommends that if the program on obstetrics is a success that the House of Delegates take under consideration the formation of a Section of Obstetrics and Gynecology of the Missouri State Medical Association.

The Committee on Maternal Welfare wishes to call to the attention of the component county medical societies that it stands ready at any time to furnish speakers for their meetings. These speakers will be selected from different parts of the state and will be men of experience whom it is felt will be able to present an interesting program before the county societies.

E. Lee Dorsett, Chairman,
E. E. Wadlow,
J. Milton Singleton,
Paul F. Fletcher,
J. L. Johnston.

The report of the Committee on Health and Public Instruction, A. W. McAlester, III, M.D., Kansas City, Chairman, follows:

REPORT OF THE COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION

(McAlester Foundation)

The Committee met in St. Louis on January 25 and the purpose of the Committee, to give medical and health information to the lay public, was discussed.

Dr. McAlester stated that the McAlester Foundation did not have funds enough to do any appreciable work and that he felt the Committee should ask for funds from the Council to carry on lay education or turn the present available funds to the University of Missouri. He then outlined the "Health Forum" which has been held in Kansas City for several years under the promotion of Mrs. Ruth Hirsch and proposed that the same thing be done in various parts of the state beginning, probably, with Springfield as a trial. He pointed out that the local organization must sponsor the address, that meeting place must be arranged and considerable publicity given the meeting in the form of newspaper stories, posters in stores and billboard announcements. He estimated that it would cost approximately $150.00 per forum.

Mr. McIntyre suggested that it might be well to begin the program with less outlay and that groups that were already established be the first contacts by speakers as civic clubs and school assemblies and that the Woman's Auxiliary be asked to participate in the planning of the program.

After considerable discussion by all present, the following plan was adopted: That "Medical Forums" be promoted in several towns, arrangements to be made for the speaker to appear before a civic club and a school assembly and an evening meeting be optional with the local group.

For the first few meetings the following procedure was adopted: Mr. McIntyre would present the proposal before a county society, preferably with the members of the Auxiliary present. A committee would be appointed by the Society to advise a committee from the Auxiliary, or the Auxiliary as a whole, in promotion of the meeting.

The Society and Auxiliary would decide whether or not an evening open meeting and forum was desired and, if so, the Auxiliary would be asked to do the promotion work for the meeting seeking the assistance of the county health nurse in distributing posters, the County Tuberculosis set-up and churches and in obtaining permission to place posters in stores and public places. The Association would expect to furnish posters and furnish a speaker who would address a civic club at noon, a school assembly in the afternoon and the group in the evening if so planned. All forums will be termed "(County) Medical Forum in cooperation with the Missouri State Medical Association."

Each member of the committee was requested to send in suggested speakers for the plan.

It was decided to ask the Council for an appropriation of $500.00 for the remainder of the fiscal year for the carrying out of this work. Also, it was felt that approval of the Committee on Public Policy and Public Relations must be obtained.

The appropriation was granted by the Council and work has begun on activating this project.

A. W. McAlester, III, Chairman,
Joseph Conrad,
Grayson Carroll,
M. K. Underwood,
J. V. Bell.

The report of the Committee on Constitution and By-Laws, Joseph C. Peden, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

The following amendment of the By-Laws is submitted upon the recommendation of the Council:

Amend Section 1, Chapter VII, by adding the words "A Committee on Anesthesiology" so that the Section will read:

Chapter VII—Committees

Section 1. The standing committees of this Association shall be as follows:

A Committee on Scientific Work.
A Committee on Publication.
A Committee on Medical Defense.
A Committee on Medical Education and Hospitals.
A Committee on Medical Economics.
A Committee on Postgraduate Course.
A Committee on Cancer.
A Committee on Public Policy and Public Relations.
A Committee on Maternal Welfare.
A Committee on Infant Care.
A Committee on Mental Health.
A Committee on Constitution and By-Laws.
A Committee on Health and Public Instruction (McAlester Foundation).
A Committee on Control of Venereal Disease.
A Committee on Fractures.
A Committee on Conservation of Eyesight.
A Committee on Endowments.
A Committee on Anesthesiology.

Unless otherwise provided in these By-Laws all committees shall consist of five members, two serving for one year, two for two years and one for three years. At the 82nd Annual Session one shall be appointed for three years, one for two years and one for one year. Thereafter the President shall appoint as many as are needed to fill vacancies.

Joseph C. Peden, Chairman,
B. Landis Elliott,
John J. Hammond,
S. R. McCracken,
J. H. Summers.

Speaker: We have the following letter from Dr. Peden: "In compliance with the duties of the Committee on Constitution and By-Laws, as set forth in Section 13, Chapter VII, of the By-Laws, I am hereby presenting to you a proposed amendment to Article IV of the Constitution submitted by Park J. White, M.D., St. Louis:

Amend Article IV—Composition of the Association, by striking out the word "white" so that when amended the article shall read: "This Association shall consist of members who shall be members of the component county medical societies to which only physicians shall be eligible who have been certified to the headquarters of this Association and whose dues and assessments for

the current year have been received by the Secretary."

The report of the Committee on Fractures, Daniel L. Yancey, M.D., Springfield, Chairman, follows:

REPORT OF THE COMMITTEE ON FRACTURES

The Committee on Fractures deems it their primary duty to disseminate knowledge in the newer developments in the treatment of fractures, as well as stressing the repetition of fundamental principles to the surgeons and the general practitioners throughout the state. With these in mind, the Committee sponsored a symposium on "The Treatment of Fractures" which was published in the April 1947 issue of THE JOURNAL.

Individual members of the Committee have made numerous talks on the treatment of fractures before the various medical societies throughout the state. It has been our effort to present a paper on the treatment of fractures before most of the Councilor District meetings. The Committee feels that there is not a sufficient number of papers on fractures and allied trauma presented at the Annual Session of the Association, and it is our desire to work more closely with the Program Committee in disseminating more information on the treatment of these conditions.

The following recommendations are made by the Committee for the ensuing year: First, publish a symposium on "Fractures" with the cooperation of the editorial staff of THE JOURNAL in one issue; second, present a paper on the treatment of fractures and allied trauma before each Councilor District meeting, with the cooperation of the Councilor; third, request that one program be presented each year before each medical society on some phase of fracture treatment.

DANIEL L. YANCEY, Chairman,
W. R. BOHNE,
J. ALBERT KEY,
W. J. STEWART,
NICHOLAS S. PICKARD.

The report of the Committee on Control of Venereal Disease, Rogers Deakin, M.D., St. Louis, Chairman, follows:

REPORT OF THE COMMITTEE ON CONTROL OF VENEREAL DISEASE

The Committee on Control of Venereal Disease met in Jefferson City on September 23.

A proposal was submitted by the Division of Health of Missouri for the participation of private physicians in syphilis control in Missouri. The proposal follows:

"On July 1, 1947, the Division of Health discontinued its policy of compensating physicians for part time service in venereal disease clinics other than those under the supervision of the local health department. This action was taken because, in the interest of economy and efficiency, rapid treatment with penicillin is considered a more effective method of venereal disease control.

"In place of the program that has been discontinued, it is proposed that physicians be compensated for certain types of syphilis diagnosed and referred to the Midwestern Medical Center for rapid treatment. The Midwestern Medical Center is located at 3630 Marine Avenue, St. Louis, and is operated by the U. S. Public Health Service exclusively for the rapid treatment of syphilis.

"The following conditions governing the new program are proposed:

"1. Stages of syphilis for which compensation will be allowed:

"a. Primary.

"b. Secondary.

"c. Early latent (asymptomatic syphilis of less than four years duration. In the absence of history or clinical manifestations, latent syphilis in Negroes 25 years of age or under and in whites 30 years of age or under).

"d. Syphilis in pregnancy, untreated or inadequately treated.

"e. Infectious relapsing syphilis. (Other types of syphilis are, in the main, not infectious and are therefore relatively unimportant in the control program.)

"2. The Midwestern Medical Center will accept noninfectious syphilis cases on the basis of special arrangements with the physician, but no compensation will be allowed for the referral of such patients. The Midwestern Medical Center has a special form for the referral of late syphilis.

"3. The program will be in effect in all areas of the state except the following localities where public facilities already exist: St. Louis, St. Louis County, Kansas City, Jackson County, St. Joseph, Buchanan County, Cass County, Greene County, Jasper County, Johnson County, Laclede County, Marion County, Miller County, Newton County, Pemiscot County, Phelps County, Pulaski County, Texas County. (In these excluded areas, physicians refer their medically indigent patients to the local health department for this type of service.)

"4. Compensation to be at the rate of $10.00 for each acceptable patient.

"5. Midwestern Medical Center diagnosis to be accepted for purposes of determining acceptability of a case for payment.

"6. The referring physician is expected to cooperate in post-treatment follow-up.

"7. Payments will be made by the Division of Health following certification of eligibility by Midwestern Medical Center. (Confirmed diagnosis and hospitalization.)

"8. Transportation (by bus) will be made available on request to Midwestern Medical Center if patient is unable to provide transportation.

"It is further proposed that for the first six months of operation the program be limited to Public Health districts 2, 4 and 5 (Southeast Missouri). This plan will make it possible to establish a perfected administrative procedure before it is applied to the entire state."

After discussion, the Committee voted to approve the proposal and submit it to the Council of the Missouri State Medical Association.

The Council approved the proposal upon the recommendation of the Committee at a meeting on September 27 and 28.

ROGERS DEAKIN, Chairman,
CHARLES GREENBERG,
HUGH L. DWYER,
ARTHUR W. NEILSON,
W. S. SEWELL.

The report of the Committee on Industrial Health, V. T. Williams, M.D., Kansas City, Chairman, follows:

REPORT OF THE COMMITTEE ON INDUSTRIAL HEALTH

The Committee on Industrial Health met in St. Louis on October 12 with the following present: V. T. Williams, M.D., Kansas City, Chairman; C. R. McAdam, M.D., St. Louis; E. M. Fessenden, M.D., St. Louis; Richard Sutter, M.D., St. Louis County; W. Scott Johnson, Director of Missouri State Department of Industrial Health; T. R. O'Brien, St. Louis.

Dr. Williams informed the Committee that the American Medical Association Committee on Industrial Health has used the "Missouri Plan" as a model for other states to follow in the organization of industrial health programs.

The members were informed that the February 1948 issue of THE JOURNAL of the Missouri State Medical Association would be a special industrial health number. It was suggested that the following subjects be covered: "Missouri State Industrial Health Organization," "Accident Prevention in Industry," "Dermatitis," "Fractures" and that members of the Association be invited to write the suggested articles.

The Chairman contacted the Council on Industrial Health of the American Medical Association regarding the possibility of approaching medical schools in the state concerning the teaching of industrial hygiene and industrial medicine as a regular curricular activity. Arrangements were completed to have Dr. E. W. Brown of the American Medical Association to consult with the deans of St. Louis and Washington universities on February 2 and 3, 1948, on this subject.

V. T. Williams, Chairman,
E. M. Fessenden,
A. M. Ziegler,
C. R. McAdam,
R. R. Oglevie,
Dailey Appleberry,
Richard A. Sutter.

The report of the Committee on Conservation of Eyesight, C. Souter Smith, M.D., Springfield, Chairman, follows:

REPORT OF THE COMMITTEE ON CONSERVATION OF EYESIGHT

The Committee on Conservation of Eyesight met in Jefferson City on December 14 with the following present: C. Souter Smith, M.D., Springfield, Chairman; A. N. Lemoine, M.D., Kansas City; Robert Mattis, M.D., St. Louis; John McLeod, M.D., Kansas City, H.B. Stauffer, M.D., Jefferson City; S. L. Freeman, M.D., Kirksville; Mrs. Lee Johnston, Jefferson City, of the Bureau for the Blind; Helen Penn, St. Louis.

The minutes of the last meeting of the Committee were read and approved.

The reporting of visual disability was discussed by all present and it was decided that the laws of Massachusetts and New York should be studied with the view of introducing similar laws in the Missouri Legislature.

Dr. Mattis reported that the problem of handling of contact lens without the supervision of an ophthalmologist had, with little exception, been taken care of.

Mrs. Johnston told of a project in St. Louis in which 1,200 children in six schools, picked from various economic levels, were being tested for visual ability.

Means of having school children tested for visual ability throughout the state were discussed. The Committee approved the promotion of such a project and Dr. Mattis was asked to work out a chart with instructions including lighting which could be used.

Dr. Lemoine presented the problem of drivers' licenses being issued to persons with faulty vision, and it was the consensus of the Committee that some means of correcting this should be undertaken. Drs. McLeod, Stauffer and Freeman were appointed a committee to study this problem and report back to the Committee.

The possibility of having speakers on eye subjects, especially "Glaucoma," was discussed and it was requested that this be called to the Field Secretary's attention in arranging programs for county medical societies. It was suggested that when an ophthalmologist was a member of the society, that he be asked to open the discussion.

Mrs. Johnston discussed H. B. 126 which deals with teaching facilities for children with disabilities, including blindness. A résumé of the bill was presented and it was requested that a copy of this, together with the names of the members of the Senate Committee on Education, to which the bill was referred after passage by the House, be sent to Committee members. The Committee agreed to support the bill as individuals.

The question of the Bureau for the Blind using only ophthalmologists who were certificated by the American Board of Ophthalmology was discussed. It was pointed out that in certain cases it discriminated against competent men but that the ruling had been established in 1926, it being the only basis upon which the Bureau felt it could restrict the work to qualified medical ophthalmologists. The feasibility of competent men being certificated was discussed and Dr. Mattis was asked to study this and present a resolution on the subject at the next meeting of the Committee. It was stressed that should the Committee take any part in assisting competent ophthalmologists to become certified, that certain minimum standards must be outlined by the Committee.

Mrs. Johnston asked the opinion of the Committee on changing the term "Prevention of Blindness" to "Conservation of Sight." The Committee felt that the former was preferable.

C. Souter Smith, Chairman,
A. N. Lemoine,
C. P. Dyer,
Robert S. Minton,
Robert Mattis,
Winfred L. Post,
Philip Luedde,
John McLeod,
G. J. Tygett,
S. L. Freeman,
H. B. Stauffer.

The report of the Committee on Tuberculosis, E. E. Glenn, M.D., Springfield, Chairman, follows:

REPORT OF THE COMMITTEE ON TUBERCULOSIS

The Committee on Tuberculosis met in Springfield on February 15 in joint session with representatives of the State Division of Health and representatives of the Missouri Tuberculosis Association. The second meeting of the Committee on Tuberculosis was held March 15 in St. Louis.

At the meeting in Springfield a report was given by the State Division of Health on Tuberculosis beds as determined by the recently completed Missouri Hospital Survey, under provisions of Public Law 725, which shows 1,805 existing civilian tuberculosis beds. The Missouri Tuberculosis Association presented comparable figures from a survey made by that organization and also offered admission figures to the tuberculosis hospitals in the state, over approximately the last ten years. These admission figures show a higher admission rate just preceding the war, more during the war and a rising admission rate postwar. Statements were made by some of those present that tuberculosis patients in various areas of the state were required to wait long periods of time before securing admission to a tuberculosis hospital. This may be an indication of a need for additional tuberculosis beds in the State, as well as a need for better administrative procedures in getting patients into available beds.

It was pointed out by the Division of Health that many tuberculosis cases in the state came to their attention only through death certificates. This would seem to indicate considerable laxity on the part of physicians over the state in properly reporting patients under their care, diagnosed tuberculosis.

The Division of Health with its two mobile units, two mobile x-ray survey units, has taken 36,335 70 mm. films and 896 14 x 17 films up to January 1, 1948. The plans are to speed up x-ray surveys this year, that is, the plan of the State Division of Health, in that regard. The Missouri Tuberculosis Association reported on mass x-rays made and sponsored by that organization. From June 1947 to January 1, 1948, 25,000 small films had been taken in outstate Missouri by units under the auspices of various county tuberculosis societies.

Our Committee suggests that in addition to the county medical societies being contacted, as is done at present, more thorough preparation be made for the mass x-ray program before a unit is moved into its particular county. This would result in a better understanding of

the x-ray survey, and the people most likely having tuberculosis being x-rayed. It is the concensus of opinion that it is not necessary to x-ray children below the age of 15 years, unless they are tuberculous contacts or unless they have symptoms of chest disease.

After careful consideration of the information submitted, the following recommendations were made: (1) A letter enclosing report cards be sent by this Committee to all members of the State Association, requesting a report from each member of all his tuberculosis cases, whether or not previously reported, from January 1, 1947, to date of receipt of the letter. Upon the basis of this information, it will be determined, first, the number of tuberculosis beds needed in Missouri; second, where these beds should be located. (2) The Committee make plans with the State Division of Mental Diseases to study the tuberculosis problem in mental hospitals. (3) That more postgraduate programs pertaining to chest diseases be presented at medical meetings over the State. (4) That the Committee meet at least every quarter in the year for consideration of the tremendous problems with which it is concerned.

The Tuberculosis Committee wishes to comment on that portion of the Report of the Committee on Physical Medicine which deals with the treatment of Tuberculosis, as it appears in the printed report of Officers and Committees. The treatment of tuberculosis has been for years successfully based on the principle of rest of the diseased organ. Like all other therapeutic procedures, rest therapy is sometimes misused. It is the opinion of the vast majority of physicians interested and experienced in the modern treatment of tuberculosis that rest for the diseased organs, whether aided by bed rest, surgery or other methods, continues to be of most importance in the treatment of tuberculous processes. Exercise is never indicated as a therapeutic procedure if there is either subjective or objective evidence that the exercise being prescribed is increasing the extent or activity of the tuberculous disease. Increases in constitutional symptoms alone cannot be relied upon as an indication in tuberculous activities, as tuberculous disease is often progressive in their absence. The physical therapist is an important adjunct to treatment, especially after rest, surgery or other measures that control the tuberculous disease. However, like other medical aids, physical therapy should be prescribed by a physician experienced in the treatment of tuberculosis. We present a resolution to be acted upon whenever the proper time arrives.

E. E. Glenn, Chairman,
H. L. Mantz,
A. C. Henske,
J. L. Mudd,
Paul Murphy.

The report of the Committee on Cardiac Diseases, A. Graham Asher, M.D., Kansas City, Chairman, follows:

REPORT OF THE COMMITTEE ON CARDIAC DISEASES

It may interest you to know that some of the members of this Committee are on the Board of the American Heart Association and we know that it is their distinct wish that the working unit of the American Heart Association be made the state.

I will report only on the meeting of December 14, 1947, in Jefferson City. It was decided to inaugurate a full program for the local needs, to organize regional groups over the state. This was decided upon the recommendation of the American Heart Association.

The second thing was to organize completely the Missouri Heart Association, the members of the Committee serving as individuals to constitute an acting body organized with provisional officers so that we could perfect the organization of the Missouri Heart Association on the occasion of this St. Louis meeting. There will be an organizational meeting at 7 o'clock in the Crystal Room. Those who are interested in heart disease are asked to be present and if the subject matter presented is to your liking, I hope you will vote for the organization of the Missouri Heart Association. The Committee feels that without the organization that has been made possible through the state organization, we could not in this short period of time keep step with the desires of the American Heart Association to take advantage in Missouri of the program they are inaugurating in a nationwide area and we wish to thank you for the support we have had.

A. Graham Asher, Chairman,
Julius Jensen,
Horace W. Carle,
Drew Luten,
A. M. Estes.

The report of the Committee on Rural Medicine, R. W. Kennedy, M.D., Marshall, Chairman, follows:

REPORT OF THE COMMITTEE ON RURAL MEDICAL SERVICE

1. Twenty-four people representing ten voluntary and official health organizations and agencies in the state (including farm groups) attended a one day Rural Health Conference in Jefferson City, October 15. This conference was called by this Committee and presided over by the President of the Missouri State Medical Association. The purpose of the conference was (1) to discuss means of correlating the rural activities of the various health organizations in the state and, (2) to discuss plans designed to develop more united efforts for improving rural health. No formal program was presented but each organization represented was called on for a brief explanation of the health program of that respective organization. This procedure brought vividly to light the need in Missouri for a means of coordinating the health programs of the various organizations. Out of this discussion came a unanimous vote for the appointment of a committee from the conference: "to plan a means of securing a cooperative program toward the improvement of health in rural Missouri and report this plan at a subsequent rural health conference to be held in January 1948." A committee of six was appointed by the chairman of the conference to carry out this mandate. The chairman of the committee is from the Extension Division, College of Agriculture, University of Missouri. The Rural Medical Service Committee of the Missouri State Medical Association was requested to call the second conference on Feb. 12, 1948, at which time the appointed committee will report a detailed plan for securing coordination of health activities in the rural areas. It is logical to assume from the discussion that the plan presented will be in the form of a so-called Health Council, probably to be set up on a state level first and from there develop down to local levels. Our Committee feels that the results of this one day rural health conference will prove to be a big step toward the solution of many of the health problems in rural Missouri.

2. Through the cooperation of the Bureau of Information in the executive office of the Missouri State Medical Association a large number of desirable locations for physicians has been brought to the attention of those seeking to establish a medical practice. More than sixty physicians have located in rural Missouri during the year 1947.

3. During the last eighteen months, six rural counties have voted bonds for the construction of hospitals. Most of these hope to secure federal funds but will probably build regardless. Five small rural community hospitals have been opened. A rural fifty bed Commonwealth Fund supported hospital will be ready for operation in early 1948. Funds have been raised for two more rural community hospitals not yet under construction. A

number of other communities are considering fund campaigns for additions or new hospitals but are holding off pending completion of the Hospital Construction Plan for the State. At present no state funds are available for assisting counties to construct or maintain hospitals. Three rural hospitals have recently expanded their facilities through additional construction. Our Committee members have familiarized themselves with the provisions of Public Law 725 and have been called on at various times to appear before lay groups to discuss its provisions. Through the Association Field Secretary, who is a consultant to the Missouri Hospital Survey and planning staff, and the Association Executive Secretary, we have been kept well informed on the survey and construction plan, which are expected to be completed by March 1, 1948. We expect to assist in the construction planning stage when and wherever possible.

4. The initiation of lay health meetings in rural areas is now under way by the Association Committee on Health and Public Instruction. Our Committee will cooperate extensively in this educational endeavor.

5. Some progress is being made to expand prepaid medical care into rural communities through farm bureau groups, community wide groups and others, but much remains to be accomplished in this situation. Our Committee feels that additional hospitals in rural areas will aid greatly the rural enrollment in prepaid medical and hospital care plans.

6. Our Committee will be represented at the third annual meeting of the National Conference on Rural Health in Chicago, February 6 and 7, 1948.

R. W. Kennedy, M.D., Chairman,
E. C. Bohrer, MD.
Paul Baldwin, M.D.
H. E. Petersen, M.D.
Wallis Smith, M.D.
A. S. Bristow, M.D.
W. A. Bloom, M.D.
W. F. Francka, M.D.
J. F. Jolly, M.D.
A. L. Hansen, M.D.
George W. Newman, M.D.

Dr. Kennedy: I will read a supplementary report of what has happened since the report was published.

A Missouri Health Conference, sponsored by this Committee, was held in Jefferson City on February 12, 1948, with thirty-seven representatives of twenty-one statewide health organizations and agencies present. This meeting was an out growth of a similar rural health conference held on October 15, 1947. Both conferences were concerned with the problem of providing some means through which greater coordination and cooperation on the part of the various health organizations and agencies of the state can be effected.

Dr. F. F. Crockett, of the Committee on Rural Medical Service of the American Medical Association, addressed the conference on the value of state health councils. Following this inspiring talk, the Health Conference committee appointed at the October 15 conference recommended in its report that a statewide coordinating agency be appointed on a voluntary basis, to be known as the Missouri Health Council, with the following objectives: To bring together the statewide organizations and agencies with the fundamental interest of health for the discussion and debate and interchange of opinions and findings, to serve as a clearing house on health problems and programs, to facilitate the joint planning in order to reduce supplication of effort on the state and local levels. A suggested basic framework for the proposed Missouri Health Council was included in the committee report. This report was approved and the following action was taken. The conference appointed Ray McIntire, our Field Secretary, temporary secretary for the organization of the Missouri Health Council. The secretary was directed to send a copy of the coordinating committee's report to each of the thirty-five organizations and agencies invited to the conference, with a request for an official letter indicating the name and address of the official representative of each organization desiring to become a member of the proposed Missouri Health Council. The secretary was further directed to call a meeting of the formal organization of the Council within sixty days, if a minimum of ten would-be members replied, or as soon thereafter as a minimum of ten affirmative answers were received.

Speaker: Will Dr. John W. Williams please make some remarks to the House of Delegates in reference to this report.

John W. Williams, M.D., Jefferson City: I think I had better just bring you up-to-date on the Hospital Survey and construction program instead of going into the details. As you know, it was just a little more than a year ago that the survey schedules were given to the hospital administrators throughout the state. With the almost unanimous and complete cooperation of the hospital authorities, we were able to do in this state, in about six months, what many of the states have taken two years to do, so that the survey was completed by the first of December. With material at hand, it then became necessary to receive from the Council about four definite recommendations before any plan could be drawn up. These four recommendations were received and upon the basis of those recommendations the entire plan is predicated.

Among the important ones of these four recommendations were, first, that only beds that were in acceptable institutions be considered, and by acceptable, I mean hospitals supplying a community need, or who were not supplying a community need, or hospitals that were considered hazards, not by the survey group, but by groups of competent engineers, and beds that were beyond the normal capacity of any hospital. In that way the survey and planning group could tell exactly how many beds were in each area. The Council also recommended that insofar as possible, every resident of the state be within fifty miles of a general hospital, and that sixty miles would be a maximum distance. Also, and I think of possibly the most importance, it was advised that the survey and planning groups must consider the economics in the operation of any hospital so constructed, and in planning should take that into consideration, and on the basis that these hospitals would accept, at least for temporary treatment and diagnosis, mental cases, tuberculosis, general communicable diseases, the Council recommended that no hospital be constructed of less than fifty beds capacity. On the basis of those recommendations and in compliance with the provisions of both Federal Law 725 and the State Law, there was developed this plan. It consists of five base hospital areas. A base hospital area is an area that contains now, or will contain a hospital of at least 200 beds, connected with a medical school, or used for teaching purposes, or serves a community of at least 100,000 population; on that basis the state has been divided into five base hospital areas. The next grouping were areas in which there were hospitals of at least 100 beds, containing certain facilities. Using the existing institutions and planning for future developments, there are seven of those areas throughout the state. The next group includes the rural areas, all areas not included in the base or intermediate zones, which gives thirty-nine rural areas throughout the state.

On that basis, then, the entire state is mapped out, and possibly fortunate for us, the law requires us to name the town in which the hospital will be located and give the reasons for that designation. Otherwise, I suppose we would have said, we will just put it in the area, but as it is the map shows the location of each one of these new facilities, or expanded facilities.

The next problem to come before the council was the establishment of a priority system of allocation.



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There had to be at least four priority groups under the act, so we accepted four as our standard. The priority Group A hospitals are those areas in which there is less than 25 per cent of the bed need met. The priority B Group goes from 26 per cent to 50 per cent; the C Group is from 51 per cent to 80 per cent and the D Group is from 81 per cent to 100 per cent. On the basis of this priority group construction schedules will be developed. I simply want to call to your attention that any area priority in the A Group that is not ready for a construction program this year, may be passed over, but they do not lose their place as of July 1, again, so that although one of these areas may not receive an allocation this year they do not lose their place at any time in the priority listing.

The entire plan was developed and approved by the state Hospital Council. Material is now in the hands of the Surgeon General for final approval. When final approval has been received, each area that is listed in the A Group priority will receive immediately a complete set of application forms. There are four parts to this application and you will have them in each area just as rapidly as we can mail them out when we receive approval of the plan. The sooner the A Group get those back to us, the sooner the B Groups know whether or not they are going to be a participant this year. We are at the place now of waiting for final action by the Surgeon General.

The report of the Council, J. W. Thompson, M.D., St. Louis, Chairman, follows:

REPORT OF THE COUNCIL

The Council of the Association met in St. Louis on May 17 and 18 with the following present: H. E. Petersen, M.D., St. Joseph; W. F. Francka, M.D., Hannibal; J. W. Thompson, M.D., St. Louis; Otto W. Koch, M.D., Clayton; J. F. Jolley, M.D., Mexico; R. W. Kennedy, M.D., Marshall; C. Edgar Virden, M.D., Kansas City; Wallis Smith, M.D., Springfield; E. C. Bohrer, M.D., West Plains; Frank W. Hall, M.D., Cape Girardeau; Morris B. Simpson, M.D., Kansas City; W. A. Bloom, M.D., Fayette; C. E. Hyndman, M.D., St. Louis; Robert Mueller, M.D., St. Louis; R. E. Schlueter, M.D., St. Louis; Mr. W. H. Bartleson, Kansas City; Mr. Raymond McIntyre, St. Louis; Mr. T. R. O'Brien, St. Louis.

The by-law adopted concerning junior membership was reviewed and a portion of the transcript of the minutes of the annual session was read which showed the by-law to read as follows: "Section 1. The annual dues shall be $8.00 and shall be levied per capita on the members of the component societies of the Association, provided that for the first four years subsequent to graduation the annual dues shall be one-half of the regular dues with all the privileges of active membership in the Association, and providing further that the annual dues of any member who is serving full time internship or residency in a hospital shall be one-half of the regular dues, and such members shall not be subject to any special assessments. . . . "

Mr. O'Brien read a letter from Mrs. H. C. Trippe of the Jackson County Woman's Auxiliary written to Dr. Bloom stating that the Auxiliary had a deficit of $154.56 from the annual session. Upon motion, it was voted to pay this amount to the Jackson County Auxiliary.

Mr. O'Brien reported a conference with Mrs. W. L. Allee, President of the Woman's Auxiliary. The question of a registration fee at the annual meeting was discussed. The Council decided that it should be suggested to the Auxiliary that the dues be raised to $1.00 a year and that there be no registration fee.

A scholarship fund held by the Auxiliary was discussed and the Council wished more information concerning the original designation on the money before it approved any action of the Auxiliary.

The following advisory committee to the Woman's Auxiliary was approved: Drs. W. H. Breuer, St. James; W. E. Koppenbrink, Higginsville; John O'Connell, Overland.

A letter from Dr. Ralph L. Thompson, St. Louis, thanking the Council and members for the silver platter which was presented to him at the Annual Session was read.

A letter from the Kansas City Society of Anesthesiology suggesting that the Association have a committee on anesthesiology was read. After discussion it was voted that the President appoint a special Committee on Anesthesiology.

Material from the A. M. A. concerning each state having a committee on national emergency medical service was discussed and it was voted that the President should appoint such a committee in Missouri.

Mr. McIntyre reported on meetings that had been held since the time of the last meeting of the Council and called attention to several that will be held in the near future.

Mr. O'Brien presented information on S. B. 259 which would abolish the Cancer Commission. Dr. Major Seelig and members of the Council discussed the bill after which it was moved and passed that the Council go on record that it opposes S. B. 259 and favors the maintaining of the function of the Cancer Commission as established by law.

The resolution on breaking the annual session into sections which was referred to the Council by the House of Delegates was discussed by all present. After discussion, it was moved and passed that the ideas brought out be given in detail to the program committee, that the executives in the state office work with the program committee throughout and that the program be approved by the Council. The majority opinion was against sections.

It was suggested that one person from the executive office be in the scientific session and be in charge of the arrangements and details during the session. It was suggested that Mr. McIntyre do this.

The question of having lay meetings at the same time as county society meetings was discussed together with the possibility of the Woman's Auxiliary assisting in the arranging of the meetings. This was left to the office for further study.

The Treasurer reported on the finances of the Association and moved that a $5,000 bond be purchased. This was passed.

Dr. Thompson presented a resolution in regard to schools of medicine establishing organizations for the practice of medicine to supplement income and suggesting in lieu thereof the establishing of a national fund for medical teaching and research. After discussion, it was voted to adopt the resolution in principle for rewriting before presentation to the A. M. A. A committee of Drs. Virden, Petersen, Simpson and Thompson were asked to consult with Dr. Schlueter for rewriting the resolution.

The following Committee on Publication was approved by the Council: Drs. G. V. Stryker, St. Louis, Chairman; V. T. Williams, Kansas City; David LeMone, Columbia; H. E. Petersen, St. Joseph; Fred R. Farthing, Springfield.

Dr. Kennedy and Mr. McIntyre presented the idea of preparing a map which would show the number of physicians, hospital locations and mileages and have this presented at meetings of interns and residents by selected physicians from rural Missouri as a means of interesting physicians in locating in rural areas.

The idea of having county health councils was presented, it being explained that these would be made up of representatives of various organizations and the public. It was stated that Mr. Starr of the Missouri Farm Bureau Federation was interested in such a plan. Upon motion, the Rural Health Committee and Mr. McIntyre were empowered to make arrangements for a meeting of representatives from various groups to dis-

cuss the possibility of such councils.

Dr. Goodrich made a brief report for the committee appointed to study correlating the Blue Cross and medical and surgical plans so that they would be more uniform. Dr. Goodrich reported that the committee was at that time having its second meeting and it was believed that the committee would work out all points so that a definite recommendation could be made to the boards of trustees of the different plans. Several points which had been covered were given as: number of contracts to be the same; rates to be the same; enrollment regulation to be 30 per cent in all plans; service charge to be the same; designated service areas; aligning of benefits on x-ray, x-ray therapy, minor surgery, tonsillectomy, obstetrics.

Meeting of September 27, 28

The Council met at the Coronado Hotel, St. Louis, on September 27 and 28, 1947, with the following present: Drs. H. E. Petersen, St. Joseph; W. F. Francka, Hannibal; J. W. Thompson, St. Louis; Otto W. Koch, Clayton; J. F. Jolley, Mexico; R. W. Kennedy, Marshall; Edgar C. Virden, Kansas City; Wallis Smith, Springfield; E. C. Bohrer, West Plains; Frank W. Hall, Cape Girardeau; Morris B. Simpson, Kansas City; Robert Mueller, St. Louis; C. E. Hyndman, St. Louis; W. A. Bloom, Fayette; G. V. Stryker, St. Louis; R. E. Schlueter, St. Louis; A. R. McComas, Sturgeon; James R. McVay, Kansas City; Mr. T. R. O'Brien, St. Louis; Mr. Ray McIntyre, St. Louis; Mr. W. H. Bartleson, Kansas City. Members of committees reporting to the Council and guests of the Council were: Drs. R. M. James, Jefferson City; Carl F. Vohs, St. Louis; Howard B. Goodrich, Hannibal; R. O. Muether, St. Louis; Ira H. Lockwood, Kansas City; A. W. McAlester, III, Kansas City; A. W. McAlester, Jr., Kansas City; Grayson Carroll, St. Louis; J. H. Kopp, St. Louis; Mr. Ray F. McCarthy, St. Louis; Mr. Donald Pratt, St. Louis; Mr. Hartnett, St. Louis.

Upon motion of Dr. Francka, the selection of the dates of the 1949 Annual Session were left to the officers and the executive office.

Upon motion of Dr. Kennedy it was decided to invite the A. M. A. to hold its 1949 midyear session in St. Louis.

Upon motion of Dr. Francka, the Chairman of the Council was instructed to appoint a committee to consider emergency expenditures for the office and salaries of office personnel. The following committee was appointed: Drs. Thompson, Hyndman, Simpson, Bloom, Jolley.

Upon motion of Dr. Petersen, Mr. O'Brien was instructed to obtain data on the possibility of Social Security for personnel and with the committee on emergency expense to report to the next meeting of the Council.

Dr. Hyndman reported the Association in sound financial condition and his report was accepted.

Mr. O'Brien read letters from the A. M. A. concerning national health insurance which had been sent to Governors of the various states and stated that this subject without doubt would be a political issue in the next national election and would appear in party platforms.

A letter from Mr. Richard Dabney asking endorsement of H. B. 126 was read. After discussion, it was decided that further study of this Children's Code bill as well as H. B. 65 should be made by Mr. O'Brien and action by the Council deferred until the next meeting.

It was suggested that Mr. O'Brien secure additional information regarding S. B. 259, and report to the Council at the next meeting.

The veto by the Governor of the appropriation for the sanatorium at Mount Vernon was discussed by Mr. Pratt and Mr. Hartnett of the Missouri Tuberculosis Association. They explained that a survey of the state was being made and that they would present a report of the survey as soon as it was completed, and that such information as was available at the time of the next Council meeting would be presented.

Dr. Mueller in reporting on public relations work of the Association referred to an article by Mr. Lester Perry of Pennsylvania and pointed out what Missouri was doing in the points Mr. Perry stressed as follows: relation with members of the Association; relation of individual doctor with patient; relation with allied groups; relation with pharmaceutical groups and representatives; relation with health agencies; relation with government agencies; relation with civic clubs; relation with newspapers, clergy and representative civic persons; relation with the general public. It was pointed out that 90 per cent of public relations was various relationships and 10 per cent was newspaper releases in Pennsylvania.

Mr. O'Brien enlarged on the various phases Dr. Mueller brought out and told of releases that had gone out since the last Council meeting and their use. He announced the beginning of a monthly health column in county newspapers the first of October.

Mr. McCarthy reviewed the work of the Hospital Survey Committee in its work to comply with the requirements of the Hill-Burton Hospital Construction act. He stated that the survey of hospital and facilities was 85 per cent completed and at its completion a survey of needs of hospitals would be laid out on an area basis. He advised that counties interested in hospitals go ahead with the raising of funds but await any action on construction until the areas had been designated.

Dr. J. H. Kopp spoke concerning the American Association of Physicians and Surgeons and asked the endorsement of the Council. After discussion in which it was brought out that the work appeared to be similar to that of the National Physicians' Committee and that the Council had approved the National Physicians' Committee, it was recommended that it be suggested to the proper authorities of the two organizations that they combine their objectives.

Mr. O'Brien reported a meeting of the Committee on Control of Venereal Diseases at which the following proposal by the Division of Health was approved and recommended to the Council for approval: Any physician in the state who has a patient with syphilis whom he thinks should be sent to the rapid treatment center, the Midwestern Center, St. Louis, may do so and be paid $10.00 for his diagnosis and the patient receive free care; or if he feels the patient can afford treatment, the Division of Health will supply the necessary drugs for the physician to care for the person as a private patient. For the time being, the program will be placed in operation only in the Southeast area of the state. Upon motion of Dr. Francka the report was accepted.

Mr. McIntyre reported that only a small number of county societies continued meetings during the summer but that beginning in September, many meetings were held. He reported on attendance at the Health Education Workshop held in Columbia in August under the sponsorship of the Department of Education of the University of Missouri. He announced a Rural Health Conference to be held in Jefferson City on October 15 to which many health agencies had been invited to send representatives for the purpose of better coordination of activities. It is hoped that this meeting will lead to other discussion meetings with larger representation.

Dr. Simpson moved that the Council consider an award of merit or appreciation for persons who had been of unusual service in promoting the health of the people. Upon motion, the following committee was appointed: Drs. Francka, Mueller, Hall, Koch, Bloom.

Dr. Petersen invited the Council to hold its next meeting in St. Joseph. The invitation was accepted.

Dr. McAlester reported for the Committee on Public Health and Education and recommended that lay meetings with medical speakers before high schools, health forums and interested groups be carried out. It was

recommended that the Woman's Auxiliary be urged to participate in this plan. The report was approved.

Drs. McVay, Schlueter and McComas gave brief reports on the last session of the A. M. A. Dr. McVay pointed out the stressing of public relations in the doctor's office and reported work by the Council on Medical Service and urged that health councils must be initiated and directed by county medical societies. Dr. Schlueter reviewed the situation on the Rich Associates association with the A. M. A. and the adverse newspaper comments which their resignation evoked.

Dr. Schlueter read the following resolution which was presented by the Missouri delegates, at the instruction of the Council, to the House of Delegates of the A. M. A.

Whereas, Some medical schools are in need of a greater income to maintain their present high standards of instruction and scientific medical research; and

Whereas, It is actually impossible to increase the tuition fees sufficiently to secure the required funds; and

Whereas, Certain schools of medicine are considering the organization of clinics for the practice of medicine and surgery on a profit making basis in order to attain this end; and

Whereas, Such clinics would be in direct competition with the graduates of the medical schools involved as well as with all other practicing doctors of medicine; therefore, be it

Resolved, That the House of Delegates of the American Medical Association be requested to instruct the Council on Medical Education and Hospitals to study this problem and find the proper means for combatting this critical situation, which might even require an appeal to existing foundations or the creation of a new national voluntary foundation for the specific purpose of subsidizing approved medical schools which require financial assistance.

The resolution was referred to the Reference Committee on Medical Education and Hospitals which recommended that the contents of this resolution be considered by the Council on Medical Education and Hospitals of the A. M. A. in their survey of medical schools and hospitals.

Upon motion of Dr. Virden, the following interpretation of the by-law concerning junior membership was passed: That the amendment became effective at time of passage at the 1947 meeting and affects only members coming in after that date.

Dr. Muether outlined the program for the 1948 Annual Session as five scientific sessions, one on pediatrics, one on obstetrics, one on problems of the acute abdomen and two sessions of papers on varied subjects. He stated that some scientific exhibits would be used. The report was accepted.

Dr. Goodrich presented the report of the special committee on cancer as follows:

The committee unanimously recommends:

1. That there be only one chapter, the Missouri Chapter.
2. That we use the partially reorganized chapter as the framework on which to complete the reorganization.
3. That we recognize Dr. Robnett as president of this chapter (even though he has sent in his resignation) because there has been no meeting since he sent in his resignation.
4. That we commend Mrs. Fred Thompson, Madison, commander of the Field Army, vice president of the new organization and acting president since Dr. Robnett sent in his resignation, for her efforts and cooperation.
5. We recommend that the board of directors be enlarged to thirty-two, keeping all those who attended the first meeting on May 18, 1947, in Jefferson City.
6. That these directors be sixteen lay persons and sixteen doctors of medicine.
7. That eight of the lay persons be from the Field Army.
8. That the other eight lay persons be representative citizens interested in the work of the cancer program, such as representatives of the farm bureau, the newspapers, teachers, business, etc.
9. That ten of the doctors of medicine represent the ten Councilor Districts and be appointed by the Council.
10. That the six additional doctors of medicine come three from St. Louis and three from Kansas City.
11. That all doctors of medicine selected have a real interest in or expert knowledge of cancer and its treatment.
12. We recommend that Dr. Jorstad, present chairman of the executive committee, function until the new reorganization is completed, and then turn over the funds, records, etc., to the new organization.
13. That the present board of directors and officers of the new organization meet as soon as possible to elect the new directors and then that another meeting should be called after reasonable notice to the newly elected directors for a full meeting of the directors to create a permanent organization with permanent officers, committees, etc.
14. We recommend that at all times the new Missouri chapter think and act for the good of the State of Missouri as a whole.

The charter of the reorganized chapter has been issued. The committee thanks both Dr. Robnett and Mrs. Thompson for their patience in a difficult situation.

The committee asks to be discharged as its work is completed. Signed by Drs. Goodrich, Robnett, Ernst, Virden, Jorstad. Upon motion of Dr. Kennedy, the report of the committee was accepted.

Dr. Stryker made a brief report on The Journal and asked that Councilors assist the Committee on Publication by notifying it of good scientific material available and of news of the members.

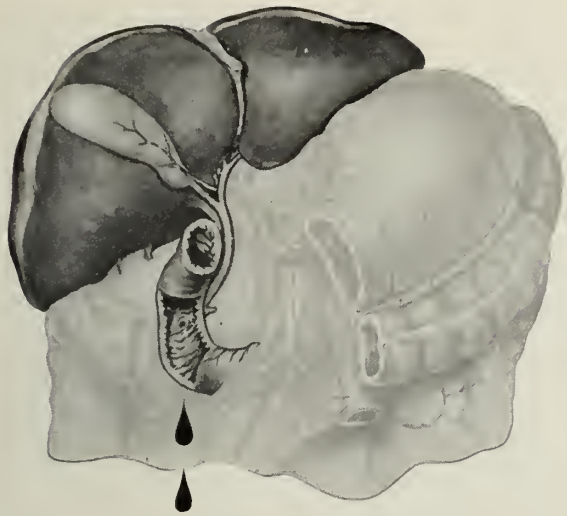
The report of the special committee to study the four hospital and medical service plans in the state was presented by Dr. Goodrich. After discussion, a motion by Dr. Virden that this information be transmitted to the four Boards of Trustees was passed. Mr. Bartleson was requested to incorporate the minutes of the September 27 meeting of the committee into minutes of previous meetings so it would be in proper form to submit to the Boards of Trustees.

Meeting of November 22, 23

The Council met at the Robidoux Hotel, St. Joseph, on November 22 and 23, with the following present: H. E. Petersen, M. D., St. Joseph; W. F. Francka, M.D., Hannibal; J. W. Thompson, M.D., St. Louis; Otto W. Koch, M.D., Clayton; J. F. Jolley, M.D., Mexico; R. W. Kennedy, M.D., Marshall; C. Edgar Virden, M.D., Kansas City; Wallis Smith, M.D., Springfield; E. C. Bohrer, M.D., West Plains; Frank W. Hall, M.D., Cape Girardeau; Morris B. Simpson, M.D., Kansas City; Robert Mueller, M.D., St. Louis; W. A. Bloom, M.D., Fayette; Mr. W. H. Bartleson, Kansas City; Mr. E. Hirsch, St. Joseph, Mr. Raymond McIntyre, St. Louis; Mr. T. R. O'Brien, St. Louis.

Dr. Virden asked that the minutes of the meeting of the Council for September 28 be corrected so that the motion regarding the report of the Coordinating Committee for medical and hospital service plans read: That the report of the committee be approved and the information in the report be transmitted to the four boards of trustees. The correction was accepted.

For several years the Missouri State Medical Association has been exempt from paying income tax, old age assistance tax and unemployment compensation by official ruling of the Treasury Department, dated August 14, 1935. On October 20, 1947, and November 10, 1947, the Association was advised officially that the status had been changed because of recent Supreme Court decisions. The status as outlined in these letters is continued exemption on federal income taxes; however, effective January 1, 1947, the Association is sub-



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*Albrecht, F. K.: Modern Management in Clinical Medicine, Baltimore, The Williams and Wilkins Co., 1946, p. 170.

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ject to workmen's compensation and effective October 1, 1947, to old age assistance. The Association was given the option of voluntarily furnishing information from 1943 and paying no tax or the Administration would make an estimation and collect the back tax. Mr. O'Brien said that he had contacted the American Medical Association and that they had been placed in the same category. After discussion and upon motion of Dr. Smith, seconded by Dr. Petersen, Mr. O'Brien was instructed to furnish the material outlined within the prescribed ninety days.

The following report submitted by Dr. Hyndman, together with a financial statement and suggested budget were presented:

"The affairs in the office of the Missouri State Medical Association are running smoothly and in accord with our budget.

"The office is in order and besides the regular duties, they are making great progress with the public relations work. With additional help at intervals, a smooth running system has been started with a definite financial saving to the Association.

"A tentative budget has been arranged for next year which necessarily will be slightly increased. Detail report and suggested budget will be presented herewith."

Upon motion of Dr. Kennedy, the Treasurer's Report was accepted.

The following Committee on Budget was appointed: Drs. Bohrer, chairman; Francka, Petersen, Bloom.

Dr. Francka reported for the Committee on Award as follows: The Committee on Award has not had a formal meeting. However, the Executive Secretary has been asked to secure information from several states which provide such an award and we expect to have a complete report at the next Council meeting.

Mr. O'Brien reported a round table discussion on legislation in which he had taken part during the Secretary-Editors Conference in Chicago.

H. B. 126 of the Children's Code bills was discussed and it was decided that this was an educational problem, not a medical one, and that the Association should take no action on it.

The following resolution was presented by Dr. Thompson:

Whereas, Anesthesiology has been recognized as a specialty for the last ten years by the American Board of the American Medical Association, and

Whereas, It has existed as a specialty for the last thirty years, and

Whereas, Other recognized specialties have a standing committee in the Missouri State Medical Association, and

Whereas, The St. Louis Society of Anesthesiologists desires to maintain and improve the specialty nationally and locally, therefore be it

Resolved, That the Missouri State Medical Association be requested to appoint a standing committee on Anesthesiology, said committee to be composed of five members of the Missouri State Medical Association and the American Society of Anesthesiologists.

The resolution was signed by Drs. Joseph McNearney, St. Louis; O. T. Blanke, Joplin; J. J. Merz, St. Louis; Peter DeMaria, Kansas City; Charles White, Kansas City.

After discussion, Dr. Virden moved that a special committee be appointed and that the resolution be referred to the Committee on Constitution and By-Laws since establishment of a standing committee would necessitate a change in the by-laws. The motion was passed.

Mr. McIntyre reported on activities of county medical societies and Councilor Districts since the last Council meeting as well as the Rural Health Conference, health councils and the placing of physicians in out-state Missouri. Upon motion of Dr. Petersen, the report was approved.

Dr. Mueller gave the following report of the Committee on Public Policy and Public Relations: The Committee on Public Policy and Public Relations met at the Coronado Hotel, St. Louis, on November 16 with the following present: Drs. Robert Mueller, chairman; Arie C. van Ravenswaay, Boonville; Llewellyn Sale, St. Louis; Frank Hall, Cape Girardeau; Mr. T. R. O'Brien, Mr. Raymond McIntyre, Miss Helen Penn, St. Louis; Mr. W. H. Bartleson, Kansas City. Mr. Robert Willier, St. Louis, public relations consultant, presented a program and proposal for public relations work to the committee. After discussion by all present the following recommendation was adopted for presentation to the Council: That any expansion of public relations work should be by personnel employed in the Association office and that, if advisable, arrangements be made for consultant advice upon the occasions when needed.

After discussion by Drs. Smith, Francka, Mueller, Virden and Mr. O'Brien, upon motion by Dr. Virden the report was accepted with the request that further study be given.

The Council went into executive session.

Meeting of November 23

Dr. Thompson presented the following report of the Committee on Emergency Expenditures which on motion was approved: The Committee approves raises for personnel in the office as recommended by Mr. O'Brien, effective October 1. The Committee also approved travel allowance of 7 cents per mile when automobiles are used by the Field Secretary and the Executive Secretary, effective October 1.

Dr. Thompson presented the problem which exists in St. Louis of the restriction of any private practitioner from being allowed to collect fees on accident cases hospitalized in St. Louis City Hospital. It was pointed out that in many instances insurance is involved and the hospital and all services are paid for except the medical service. Dr. Virden pointed out that in Kansas City General Hospital, money that would be paid to a physician who is on the staff went into a fund but that if a patient could not be moved from the hospital and was an emergency case, a private physician could treat the patient, at the patient's request, and bill the patient for his services. It was decided that further information from other cities would be obtained and the problem would be studied further.

The question of the assessment being made a part of the permanent dues and raising the dues was discussed. The following committee was appointed to study this and report at the next meeting of the Council: Drs. Francka, chairman, Jolley, Smith, Virden and Thompson. In this connection the use of a brochure on the Association was discussed but no conclusion drawn.

Dr. Smith asked the approval of the Council for the hyphenation of the Barry, Lawrence, Stone, Christian and Taney counties to be known as the Ozarks County Medical Society. Approval was voted.

S. B. 223 which provides that any county which desires more than one county tax supported hospital can have such upon vote of the people of the county, was discussed. Upon motion, the Council went on record as opposing this bill.

A vote of thanks was given Dr. Petersen for his arrangements and hospitality during the Council session.

Dr. Virden invited the Council to meet in Kansas City at any time that it seemed feasible.

The following budget was adopted:

Salaries	$23,700.00
Printing Journal	15,000.00
Postage and Express	1,000.00
Printing, Stationery	2,000.00
Travel, Executive Secretary	1,000.00
Travel, Field Secretary	1,800.00
Telephone and Telegraph	1,000.00
Office Rent and Light	2,500.00
Meetings and Committees Expense	10,500.00

Defense	500.00
Postgraduate Course	1,000.00
Woman's Auxiliary	500.00
Public Relations	4,500.00
Insurance Annuity	950.00
Miscellaneous General Expense	2,400.00
Furniture and Fixtures	500.00
Total	$68,850.00

Meeting of January 31, February 1

The Council met at the Coronado Hotel, St. Louis, on January 31 and February 1, 1948, with the following present: H. E. Petersen, M.D., St. Joseph; W. F. Francka, M.D., Hannibal; J. W. Thompson, M.D., St. Louis; Otto W. Koch, M.D., Clayton; J. F. Jolley, M.D., Mexico; R. W. Kennedy M.D., Marshall; C. Edgar Virden, M.D., Kansas City; Wallis Smith, M.D., Springfield; E. C. Bohrer, M.D., West Plains; Frank W. Hall, M.D., Cape Girardeau; Morris B. Simpson, M.D., Kansas City; Robert Mueller, M.D., St. Louis; C. E. Hyndman, M.D., St. Louis; W. A. Bloom, M.D., Fayette; O. T. Blanke, M.D., Joplin; Donald M. Dowell, M.D., Chillicothe; R. E. Schlueter, M.D., St. Louis; Ralph E. Duncan, M.D., Kansas City; W. H. Bartleson, Kansas City; Raymond McIntyre, St. Louis; T. R. O'Brien, St. Louis.

Mr. O'Brien reported that he had been invited to take part in a conference of community chest representatives in Chicago on February 14 as a representative of health organizations, and asked if there were any special recommendations from the Council.

Approval of the Council was asked for the Woman's Auxiliary using a fund of $1,000 as a student loan fund. Upon motion of Dr. Virden, this was approved.

Dr. Deakin, chairman of the Committee on Control of Venereal Disease, received a letter from the Division of Health concerning the program, which had been approved by the Council, asking that the Association send out the information on its stationery and in its name. Upon motion of Dr. Virden, it was decided that it was a Division of Health program and should be sent out in their name but that they could state that it had the approval of the Association.

The dates of March 27 to March 30, 1949, were chosen for the 1949 Annual Session.

The interpretation of the by-law which abated dues of men returning from service, either in 1946 or 1947, was discussed and it was decided that the by-law was definite in its directive and that men returning after that time would pay the regular dues to the Association with component societies doing as they wished about local society dues.

Mr. O'Brien presented material from the National Society for Medical Research, which at present is doing much work in combating antivivisection, asking for support of its work. After discussion and on motion of Dr. Virden, it was voted to support the program as outlined on antivivisection and that Mr. O'Brien find out what would be a suitable donation to the organization and report back to the Council.

Mr. O'Brien presented a letter and survey blank which Dr. V. V. Wood, as state chairman of the Triological Society, wished sent to physicians who had reported poliomyelitis deaths asking whether or not there had been recent operations on the patients. Upon motion of Dr. Smith, this was approved.

The question of many accident and health insurance policies not being adequate and persons buying them not understanding them was discussed but it was felt that nothing could be done to compel persons to read policies carefully before buying them and that that was the issue.

It was reported that Mr. Carl Fox, supervisor of the Health and Physical Education Division of the Department of Education, had asked that a representative of the Association be named to serve on a committee and that Dr. Simpson had appointed Dr. Loyd, Jefferson City. Mr. Fox is securing laws and data from other states.

Mr. Bartleson reported that the A. F. of L. garment workers union in Kansas City was setting up a medical center similar to the one in operation in St. Louis. He stated that the Jackson County Medical Society had been approached and that a committee has recommended the establishment of a facility with a registered nurse and that young physicians who had recently returned from service be employed during the morning hours and that in the afternoon one be available for emergency work. The doctor on duty would decide whether the difficulty is minor or if it should be referred to the family physician. After discussion in which the question of free choice of physicians was brought out, it was voted, on motion of Dr. Petersen, to refer the matter to the Committee on Medical Economics.

The Treasurer reported that the audit of the books for 1947 would not be complete until just prior to the Annual Session.

Upon motion of Dr. Smith, it was voted to furnish $1,000.00 to the St. Louis Medical Society to assist in entertainment at the Annual Session.

After discussion of the statement of the American Medical Association that names of physicians who had dealt wrongly in the matter of fees with veterans, which supposedly will be given them by the Veterans Administration, would be forwarded to state associations, on motion of Dr. Virden the following was voted: That the Council go on record as opposed to any abuses in the care of veterans or the splitting of fees; that if the Veterans Administration presents evidence that there has been abuse, the Missouri State Medical Association will investigate and take proper disciplinary action against any member found guilty. It was brought out that the office of the Association was available to any county society in preparation of any statement which was necessary to be made, either in this connection or in any other.

Upon motion of Dr. Mueller, Mr. O'Brien was asked to make arrangements for public relations assistance during the Annual Session.

Dr. Kennedy and Mr. McIntyre reported on meetings of the Rural Health Coordinating Committee in November and December and the proposed state Health Council, the purpose of which would be the better understanding of organizations interested in health. After discussion by Drs. Virden, Simpson, Hall, Kennedy, Petersen, Jolley and Mr. O'Brien, the report of the committee was accepted with one dissenting vote. Upon motion of Dr. Simpson, Mr. McIntyre was appointed as representative on the Health Council from the Missouri State Medical Association.

Mr. McIntyre reported activities of component societies and Councilor Districts, bringing out that the joint meetings of societies were being well attended.

Dr. E. C. Ernst reported that the committee had had three meetings and that an organization had been effected for the Missouri Chapter of the American Cancer Society. The report was accepted. Dr. Simpson read a letter from the chairman of the executive committee asking that the Association name a physician to replace Dr. Dudley Robnett, deceased. Drs. Ernst and Virden were asked to make this selection and report to Dr. Simpson. The possibility of Mr. McIntyre spending some time on the work of the American Cancer Society was discussed and it was decided that this should be given further consideration.

The following recommendation adopted for submission to the Council by the Four Year Medical School Committee at a meeting on January 11 was presented: (1) That accurate estimates regarding the costs of conducting a four year school of medicine at Kansas City and Columbia be obtained. (2) Qualified advice be secured regarding rural and urban types of medical education. (3) That the Board of Curators of the University of Missouri be asked what progress had been made to-

ward carrying out the recommendation of Dr. Johnson toward improving the present two year school.

Dr. Smith presented a letter from Mr. Frank C. Mann of the Board of Curators of the University of Missouri asking that the Council, or other representatives of the Association, meet with the Board of Curators at a time convenient to all. After discussion, upon motion of Dr. Virden, it was agreed to accept the invitation of the Board of Curators. Upon motion of Dr. Bohrer, the report of the committee was accepted, waiving the last recommendation.

Meeting of February 1

Mrs. R. C. Haynes presented more data on the proposed loan fund and asked the advice of the Council on various stipulations such as the amount, security, demands made on location of practice after graduation.

Dr. Francka reported that the committee had studied three phases: The American Medical Association general practitioner award; award to Missouri physicians who had been in practice in the state for fifty years; award to a layman for outstanding service to the health of the people. The committee recommended that recommendations not be made to the American Medical Association as a Council since that was open to any county society; that the study of an award for men after fifty years of practice needed further study for suitable recommendation; that the lay award be given to Ray McCarthy. Upon motion of Dr. Virden, the report was accepted and the committee was asked to prepare a suitable scroll to be presented to Mr. McCarthy at the time of the Annual Banquet.

The following letter from Mrs. Walsh, President of Group Hospital Service of St. Louis, was read:

"The Board of Trustees of Group Hospital Service, Inc., appointed a Committee to study the recommendations of the Special Committee appointed by the Missouri State Medical Association to attempt to bring unification between the Blue Cross and Medical-Surgical Plans in Missouri, and the request from Kansas City for a reallocation of territory within the State.

"After careful study of your Committee's findings, our Committee reported, and the Board of Trustees approved, their recommendation that, in view of present unsettled economic conditions, the St. Louis Blue Cross could not undertake at this time any of the changes necessary to bring about the desired uniformity. The opinion of the Trustees is that, in the face of rising hospital costs, it would be unwise at the present time to reduce the plan's income in any manner.

"With reference to your Committee's recommendation on a reallocation of territory, the Trustees decided that the St. Louis Blue Cross could not legally ask their members in the counties involved to accept a transfer to a plan whose benefits and dues were not the same as the St. Louis plan.

"Inasmuch as the Trustees do not think this is the time to coordinate the two plans, action by St. Louis on reallocation will have to be postponed.

"The Trustees did instruct the President to designate two members of the Board to serve on the coordinating committee of ten, and the names of these appointees will be sent to you in the near future.

"I feel confident that Dr. Vohs has brought your report to the attention of the Board of the Missouri Medical Service and that you will receive a report from him."

After discussion by Drs. Smith, Kennedy, Dowell, Virden, Petersen, Hall and Francka, in which it was brought out that the purposes of the report of the Coordinating Committee seemed to have been overlooked and that counties in various districts of the state were making strong demands that the work in those counties be changed, upon motion of Dr. Virden it was voted that a reconsideration be given with a representative present who could clear up any misunderstood matters.

Dr. Schlueter reported that during the January session of the A. M. A. Dr. Allee had served on the reference committee on reports of officers and that he had served on the reference committee on medical education. He reported that one of the resolutions studied by his committee was on the distribution of interns in hospitals and that the committee recommended a committee of five to study this made up of three members from the House of Delegates and two general practitioners, which committee would report at the June session of the A. M. A. The following motion made by Dr. Virden was passed: It is the consensus of this body that the dean's committee should be enforced so that all hospitals adhere to it or that it should be abandoned.

Dr. Schlueter reported that he understood that the committee on Medical Education and Hospitals which had been asked to take into consideration pay clinics conducted by medical schools felt that it did not come within its province to look into the finances of a school. Dr. Schlueter suggested that it would be well to have a committee prepare another resolution to present at the June session of the A. M. A.

Dr. Muether, chairman of the Committee on Scientific Work, reported on the program for the annual session. The symposium on "Pediatrics" was discussed and it was decided that participants in the panel should be given an outline as proposed by the moderators.

Dr. Duncan asked that the following be inaugurated for the House of Delegates: a suitable welcome, preferably by the Mayor; an invocation; loud speaker systems; delegates be seated in sections; that minutes be recorded by a conference recording machine; committee reports be sponsored on the floor of the House. Upon motion of Dr. Bohrer, it was voted to follow this.

Dr. Grayson Carroll reported for the Committee on Health and Public Instruction recommending that speakers before lay groups be promoted with the speaker appearing before a civic group at noon, a high school assembly in the afternoon and before an open meeting in the evening if the component society wished to promote such a meeting. The committee wished an appropriation of $500.00 for this work. Upon motion of Dr. Simpson $500.00 was allocated to this work.

Mr. McIntyre asked the opinion of the Council on a dinner meeting for interns and residents, at which a general practitioner from a rural section would be asked to speak giving a picture of rural practice. Upon motion of Dr. Mueller $200.00 was allotted for this work.

Dr. Francka reported for the committee to study dues as follows: The committee suggests the House of Delegates be advised that it is the recommendation of the Council that the by-laws be amended to the effect that the annual dues for active members of the Missouri State Medical Association be raised from the present $8.00 to $15.00 and that the present assessment be discontinued. Upon motion of Dr. Mueller, this was agreed upon.

Dr. Vohs reported as follows: The Committee on Medical Economics is in complete accord with the outline as presented to it by the Jackson County Medical Society for the operation of the Kansas City Garment Workers Medical Center. Upon motion of Dr. Mueller, the report was accepted.

J. W. Thompson, Chairman.

Dr. Thompson: The Council wishes to present the following amendment to the By-Laws: Amend Section 1, Chapter VIII—Dues and Assessments, by striking out the words "$8.00" and placing in lieu thereof the words "$15.00" so that when amended the Section will read: "Section 1. The annual dues shall be $15.00 and shall be levied per capita . . ."

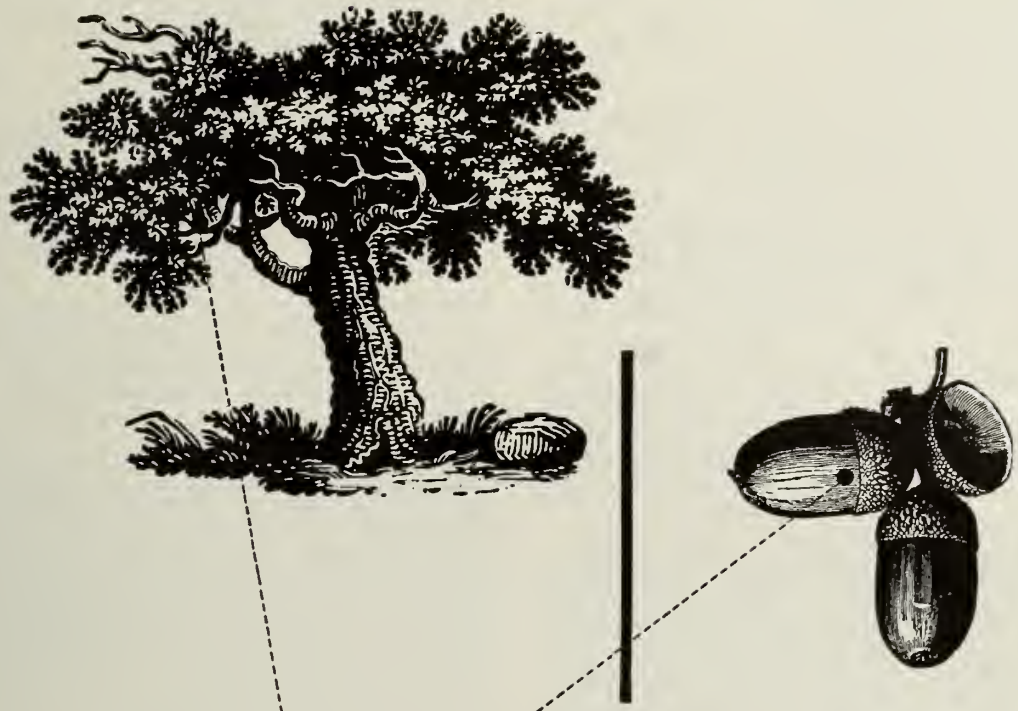
John F. Patton, M.D., St. Louis: I move that the Speaker of the House of Delegates of the Missouri State Medical Association appoint a committee of three to prepare and present to this body at the Monday afternoon session a suitable resolution covering and condemning hospitals and medical colleges engaging in the practice of medicine for profit.

Upon second, this motion was adopted.

The Speaker appointed the following committee: John F. Patton, M.D., St. Louis, chairman; W. J. Cremer, M.D., Fulton, and O. T. Blanke, M.D., Joplin.

Appointment of Committee on Nominations

The President announced the appointment of the Committee on Nominations as follows:



Not all little acorns into great oaks grow.

Nor do all little children reach optimal height.

Nutritional elements absolutely essential to optimal growth and function are today available in convenient economical forms. Vitamins D and A—alone or combined with other growth and health promoting vitamins —are provided in potencies suited to supplementation, maintenance, and prophylaxis through infancy, childhood, adolescence, and adulthood, for as long as growth and life persist.

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Paul Forgrave, St. Joseph, Chairman.
B. L. Murphy, Hannibal.
Llewellyn Sale, St. Louis.
C. P. Dyer, St. Louis.
Fred Griffin, Mexico.
A. J. Campbell, Sedalia.
R. Lee Hoffman, Kansas City.
Kenneth Glover, Mount Vernon.
R. E. Breuer, Newburg.
H. M. Henrickson, Poplar Bluff.

H. L. Kerr, M.D., Crane: Inasmuch as our old friend and State Health Commissioner, R. M. James, is ill and unable to be with us, I move that the Secretary be instructed to communicate to him our sincere regrets that he is unable to be with us and wish him a speedy recovery.

The motion, upon second, was adopted.

V. T. Williams, M.D., Kansas City: I think the Delegates owe a great debt to Senator Forrest Donnell and to Senator Kem for recent pronouncements in favor of the physicians of Missouri. I move that a resolution to express our thanks for something which heretofore has been accepted as a thing to be expected be introduced.

The motion upon second was adopted.

E. L. Spence, M.D., Kennett: I wish the Committee on Amendments to the Constitution and By-Laws would consider a change in the By-Laws in reference to numbers of Councilor Districts. When we redistricted the state, it was a time when meetings were held at different locations throughout the state. It made no difference then when the election of a Councilor was held. Now, since we meet in St. Louis and Kansas City, it seems to me it would be much better if we could change certain numbers. For instance, I am in District 10, almost adjoining St. Louis. However, we vote on our Councilor in Kansas City every two years. It is the desire of each person that as many delegates vote as possible. I hope the Committee on Constitution and By-Laws will take this under consideration and find with us. I move that the Reference Committee on Constitution and By-Laws be empowered to make that change.

Upon second the motion was passed.

The House of Delegates recessed until 4:30 p. m. on Monday.

MONDAY, MARCH 15, 1948—AFTERNOON SESSION

The recessed session of the House of Delegates convened at 4:30 p. m. on Monday, March 15, with Ralph E. Duncan, M.D., Kansas City, Speaker, presiding.

Donald M. Dowell, M.D., Chillicothe, gave the report of the Reference Committee on Amendments to the Constitution and By-Laws:

REPORT OF THE REFERENCE COMMITTEE ON CONSTITUTION AND BY-LAWS

The Committee wishes to report as follows:

The following amendment of the By-Laws is submitted to the House of Delegates:

Amend Section 1, Chapter VII, by adding the words "A Committee on Anesthesiology" so that the Section will read:

Chapter VII—Committees

Section 1. The standing committees of this Association shall be as follows:

A Committee on Scientific Work.
A Committee on Publication.
A Committee on Medical Defense.
A Committee on Medical Education and Hospitals.
A Committee on Medical Economics.
A Committee on Postgraduate Course.
A Committee on Cancer.
A Committee on Public Policy and Public Relations.
A Committee on Maternal Welfare.
A Committee on Infant Care.
A Committee on Mental Health.
A Committee on Constitution and By-Laws.
A Committee on Health and Public Instruction (McAlester Foundation).
A Committee on Control of Venereal Disease.
A Committee on Fractures.
A Committee on Conservation of Eyesight.
A Committee on Endowments.
A Committee on Anesthesiology.

Unless otherwise provided in these By-Laws all committees shall consist of five members, two serving for one year, two for two years and one for three years. At the 82nd Annual Session one shall be appointed for three years, one for two years and one for one year. Thereafter the President shall appoint as many as are needed to fill vacancies.

The following amendment to the Constitution submitted by Dr. Park J. White, St. Louis, through the Committee on Constitution and By-Laws, is submitted:

Amend Article IV of the Constitution by eliminating the word "white" so that when amended the Article will read: "This Association shall consist of members who shall be members of the component county societies to which only physicians shall be eligible who have been certified to the headquarters of this Association and whose dues and assessments for the current year have been received by the Secretary."

This amendment was laid over for a year for final action according to the Constitution.

The following amendment to the By-Laws is submitted:

Amend Chapter VIII, Section 1, by eliminating the words "$8.00" and placing in lieu thereof the words "$15.00" so that when amended the Section shall read: "Section 1. The annual dues shall be $15.00 and shall be levied per capita on the members of the component societies of the Association . . ."

On the resolution that the method of electing Councilors from the various districts be changed, it is recommended that Councilors from Districts 2, 3, 4, 9 and 10 be elected when the meeting is held in St. Louis, and the Councilors from Districts 1, 5, 6, 7 and 8 be elected when the meeting is held in Kansas City.

After discussion this resolution was referred back to the Committee for further study.

Edward L. Bortz, M.D., Philadelphia, President of the American Medical Association, addressed the House briefly.

Mr. Ed. Stegen, Chicago, of the National Physicians' Committee, addressed the House briefly.

Mr. C. P. Loranz, Birmingham, Secretary of the Southern Medical Association, addressed the House briefly.

Donald M. Dowell, M.D., Chillicothe: The following resolution has been submitted:

Whereas, The American Medical Association has recognized the necessity of an interim session of the House of Delegates, and

Whereas, There are important matters confronting the Missouri State Medical Association which may require the action of the House of Delegates of the Association between the Annual Sessions of the House of Delegates, therefore be it

Resolved, By the House of Delegates of the Missouri State Medical Association in 90th Annual Session assembled, that there shall be an interim session of the House of Delegates of the Missouri State Medical Association between the Annual Session of the House of Delegates of the Missouri State Medical Association, and be it further

Resolved, That the interim sessions shall be held during the month of November of each year, and that the date for such interim sessions shall be established by the Council and officers of the Missouri State Medical Association, and be it further

Resolved, That the By-Laws pertaining to the Annual Session of the House of Delegates shall prevail at the interim sessions, with the exception that the meetings of the House

of Delegates may be completed in a single day's session, and that those sections pertaining to the election of Councillors, Officers and Delegates to the House of Delegates of the American Medical Association shall not be effective at any interim session.

DONALD M. DOWELL, M.D., Chillicothe: The following resolution is submitted:

Resolved, That the Council be instructed to appoint a special committee or assign to an existing committee the duty of coordinating the Hospital Survey findings with the needs of the profession and the public.

Upon motion, duly seconded, this resolution was adopted.

T. E. Ferrell, M.D., Springfield, read the report of the Reference Committee on Miscellaneous Affairs as follows:

REPORT OF THE REFERENCE COMMITTEE ON MISCELLANEOUS AFFAIRS

The following resolutions are submitted:

WHEREAS, the Honorable Forrest C. Donnell, of Missouri, has constantly championed the cause of free enterprise and medical care and has diligently resisted all attempts by those who would place our profession under bureaucratic control, and

WHEREAS, He is known as the friend of the medical profession, not only in this state but throughout the nation, and

WHEREAS, In the midst of his adruous and exacting tasks as a foremost statesman, he has suffered an irreparable loss in the death of his beloved Mother, therefore be it

Resolved, That we, the 90th Annual Session of the Missouri State Medical Association, do hereby humbly extend to him our most sincere condolences in his hour of grief, and, further be it

Resolved, That these sentiments of his fellow Missourians be conveyed properly to our illustrious statesman.

The following resolution is submitted:

WHEREAS, All professional groups in our nation have been the object of a sustained and unjust program of criticism at the hands of bureaucratic minded politicians and federal employees, and

WHEREAS, There has existed unjust and discriminatory policies concerning the professions, and

WHEREAS, The Honorable James P. Kem, of Missouri, has espoused a more equitable consideration of the profession in his commendable fight to preserve American traditions and standards, therefore be it

Resolved, That we, the 90th Annual Session of the Missouri State Medical Association, do hereby praise his position and extend to him our utmost felicitations and thanks and, furthermore, be it

Resolved, That these sentiments be transmitted properly to our outstanding Senator and statesman.

Upon motion, duly seconded, these resolutions were adopted.

WHEREAS, We regret to learn of the untimely illness of Robert M. James, M.D., and

WHEREAS, Uncle Bob has been very close to the hearts of his fellow members, and

WHEREAS, He has performed a valuable service to the citizens of his state, be it now

Resolved, That the 90th Annual Session of the Missouri State Medical Association extends to him a sincere hope for a speedy recovery and return to his station, where he rightly belongs, and be it further

Resolved, That these sentiments be transmitted properly to Doctor James.

Upon motion, duly seconded, the resolution was adopted.

Resolved, That a letter enclosing official epidemiologic cards be sent by the Committee on Tuberculosis to all members of the Missouri State Medical Association requesting a report from each member of all his tuberculosis cases, whether or not previously reported, from January 1, 1947, to date of receipt of the letter.

Upon motion, duly seconded, the resolution was adopted.

E. C. ERNST, M.D., St. Louis: I wish to present a resolution for the Committee on Cancer:

WHEREAS, There is an immediate need for developing diagnostic centers, clinics and special cancer hospitals in our larger cities and outstate rural Missouri, and

WHEREAS, the Barnard Free Skin and Cancer Hospital of St. Louis for the last forty-three years has given uninterrupted clinical and diagnostic treatment and free cancer service to the patients of the state and the local Greater St. Louis area, and

WHEREAS, The Barnard Free Skin and Cancer Hospital also has served the state cancer problem as a training center for those physicians who are not members of the medical faculty of a university or medical school, and

WHEREAS, Efforts are being consummated by the lay board of directors of the Barnard Free Skin and Cancer Hospital and the trustees of Washington University to affiliate permanently the Barnard Free Skin and Cancer Hospital with Washington University, and

WHEREAS, It is further proposed to transfer all the clinical activities and to vacate the present, well established scientifically equipped and ideally located institution for the treatment of cancer and skin diseases, the Barnard Free Skin and Cancer Hospital to Washington University, therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association here assembled in its 90th Annual Session, March 15, 1948, in view of the recommendations heretofore recommended to the House of Delegates by the Committee on Cancer, go on record as vigorously opposing the affiliation of the Barnard Free Skin and Cancer Hospital with Washington University of St. Louis.

John Knight, M.D., Kansas City, gave the report of the Reference Committee on Medical Education and Public Welfare.

REPORT OF THE REFERENCE COMMITTEE ON MEDICAL EDUCATION AND PUBLIC WELFARE

The Committee submits the following resolutions:

WHEREAS, The Missouri State Medical Association has repeatedly gone on record as favoring the establishment of a four year medical school for the University of Missouri, and

WHEREAS, The President, Morris B. Simpson, in his opening address, advocated an early meeting of the Board of Curators of the University of Missouri, together with the Council of the Missouri State Medical Association for the specific purpose of establishing a four-year medical school, and

WHEREAS, Accredited authorities, after thorough analysis of the conditions which exist have declared that because of the available clinical material, and because of the potential teaching faculty, and because of the savings to the taxpayers of Missouri in utilizing existing facilities, and

WHEREAS, There exists a shortage of practicing medical physicians in the State of Missouri, therefore be it

Resolved, That the 90th Annual Convention of the Missouri State Medical Association does hereby urge the early establishment of a four-year medical school in Kansas City, Missouri, and furthermore be it

Resolved, That this expression of opinion be properly transmitted to the President and the Board of Trustees of the University of Missouri, and be it

Resolved, That this action be properly transmitted to the Governor and the Legislative bodies of the State of Missouri.

Upon motion, duly seconded, the resolution was adopted.

WHEREAS, The Missouri State Medical Association, through its rural health committee under the Chairmanship of Dr. R. W. Kennedy, Councillor of the Sixth District, has been actively engaged in sponsoring the organization of a State Health Council, and

WHEREAS, Organizations in the State of Missouri whose activities are directly related to the health of the peoples of Missouri, and whose objectives are to achieve better health and medical care for the citizens of rural Missouri, and

WHEREAS, Executive representatives of these organizations have met in conference and committees of these organizations have recommended the adoption of the organization for the formation of a permanent health council for the State of Missouri, therefore, be it

Resolved, By the House of Delegates of the Missouri State Medical Association in the 90th Annual Session assembled, that the Missouri State Medical Association endorses and approves the objectives promulgated by the conferences of these representative groups, instructs the Officers and Council of the Missouri State Medical Association to authorize that membership be taken in the Health Council, and be it further

Resolved, That the Council of the Missouri State Medical Association be authorized to appropriate and allocate a sum of money that may be determined as necessary, as membership dues in this organization, and that the Council designate a representative who shall act as the official representative of the Missouri State Medical Association in this organization, and be it further

Resolved, That the Council is authorized to designate an officer of the Association, or an employee of the Association, as the official representative of the organization in the Health Council.

Upon motion, duly seconded, the resolution was adopted.

Vern T. Bickel, M.D., Lamar, reported for the Committee on Awards for Scientific and Technical Exhibits.

REPORT OF THE COMMITTEE ON AWARDS

The following exhibits have been selected for scientific awards:

First Award: Surgical Pathology of the Intestinal Tract, J. W. Thompson, M.D., and E. L. Miloslavich, M.D., St. Louis.

Second Award: Differential Section of Fifth Cranial Nerve for Trigeminal Neuralgia, R. Dean Woolsey, M.D., St. Louis.

Third Award: Cerebral Palsy Problem in Missouri, Robert E. Bruner, M.D., St. Louis.

The following exhibits have been selected for technical awards:

First Award: Mead Johnson & Co., Evansville, Ind.

Second Award: G. D. Searle & Co., Chicago, Ill.

Third Award: Pevely Dairy Company, St. Louis.

Upon motion, duly seconded, the report was adopted.

John F. Patton, M.D., St. Louis, reported for the committee appointed "to present suitable resolutions covering and condemning hospitals and medical colleges engaging in the practice of medicine for profit."

REPORT OF SPECIAL COMMITTEE

The committee presents the following resolution:

Whereas, There is an ever increasing tendency on the part of hospitals and medical schools throughout the United States to engage in the practice of medicine for profit, and

Whereas, This corporate practice of medicine is a professional evil, second only in its consequences to socialized medicine, and

Whereas, Such practice constitutes not only exploitation of the medical profession, but of the patient, as well, therefore, be it

Resolved, That the House of Delegates of the Missouri State Medical Association, in convention assembled, condemns the practice of medicine for profit by either hospital or medical school, and be it further

Resolved, That our Delegates to the American Medical Association be instructed to so inform the House of Delegates of the American Medical Association, and be it further

Resolved, That the American Medical Association remove every hospital engaged in the practice of medicine from the list of hospitals approved for internships and residency training, and be it further

Resolved, That the American Medical Association remove any offending medical school from its list of institutions approved for medical teaching.

Upon motion, duly seconded, the resolution was adopted.

The following resolution from the Committee on Maternal Welfare was presented:

Inasmuch as a large percentage of the physicians of this Association, outside of the two largest cities, practice obstetrics, and that in the past there has been little attention paid to this subject, except one paper at the Annual Session and a short talk at the Maternal Welfare luncheon, it is the recommendation of this Committee that there be formed within this Association a special section on obstetrics. Upon investigation the Committee has learned that a number of our sister societies have such a section and the attendance at these sectional meetings has been exceptionally good.

It is not the intention of the Committee to recommend that this section be one for the specialists in obstetrics, but one in which the general problems of the general practitioner who does obstetrics can be brought forward and openly and freely discussed.

The Committee has discussed this question with a great number of the members of this Association and so far as we know, there is no adverse criticism.

We, therefore, recommend that this section be formed and put in working order by the time this Association meets in 1949.

This recommendation was referred to the Reference Committee on Amendments to the Constitution and By-Laws.

The following resolution was presented:

Resolved, By the House of Delegates that the President's Message and Recommendations, by Morris B. Simpson, M.D., containing constructive references to obligations and procedures of importance to the medical profession in the State of Missouri, be referred in its entirety to the Council of the Missouri State Medical Association for specific assignment and further procedures for its completion.

Upon motion, duly seconded, the resolution was adopted.

R. Lee Hoffman, M.D., Kansas City, invited the Association to meet in Kansas City in 1949. The invitation was accepted unanimously.

Upon motion, duly seconded, the House of Delegates adjourned.

WEDNESDAY, MARCH 17, 1948— AFTERNOON SESSION

The House of Delegates convened at 1:30 p. m., March 17, with the Speaker, Ralph E. Duncan, M.D., Kansas City, presiding.

The Committee on Credentials reported a quorum present.

The reading of the minutes of the previous meeting, upon motion duly seconded, was dispensed with by vote.

NOMINATION FOR PRESIDENT-ELECT

W. S. Sewell, M.D., Springfield, nominated Wallis Smith, M.D., Springfield, for President-Elect.

On motion, duly seconded and carried, the Secretary was instructed to cast the unanimous ballot of the House of Delegates for Dr. Wallis Smith, Springfield, for President-Elect. The Secretary cast the unanimous ballot of the House of Delegates for Dr. Smith as President-Elect of the Missouri State Medical Association for the ensuing year and the Speaker declared Dr. Smith so elected.

Wallis Smith, M.D., Springfield: It is with a grateful heart that I thank you for the great honor that you have bestowed upon me today. When I was elected to the Council seven years ago, little did I think that I might ever be selected President of this organization. I want to thank the men of the Eighth Councilor District who first picked me out and started me on this state work. They have been loyal to me throughout the years, and have given every assistance possible. During my years of work on the Council, I have had the opportunity of knowing men like Bob Schleuter, Curt Lohr, and many other men like them throughout the State. I know of the excellent job they have been doing for organized medicine. They have inspired in me the desire to do whatever I might, to carry on this excellent work.

With this great honor, I realize there is also a great responsibility. How well I may be able to carry this on, only the future will decide. The job will not be easy. Following men like Morris Simpson, who is just finishing a splendid year, following my friend, Bob Mueller, who I am certain will also have a most excellent year, you have given me a hard job. I am asking for your help and assistance. Only with that will I be able to carry on. On this, I pledge my best efforts. I thank you.

REPORT OF THE COMMITTEE ON NOMINATIONS

For Vice Presidents: B. E. DeTar, M.D., Joplin; D. P. Dyer, M.D., Sedalia; P. W. Jennings, M.D., Canton.

For Delegates to the American Medical Association: For Delegate, H. B. Goodrich, M.D., Hannibal; alternate, H. L. Mantz, M.D., Kansas City. Delegate, W. L. Allee, M.D., Eldon; alternate, Paul Baldwin, M.D., Kennett.

For Speaker of the House of Delegates, Ralph E. Duncan, M.D., Kansas City; Vice Speaker, F. T. H'Doubler, M.D., Springfield.

On motion, duly seconded, these officers were declared elected.

The Secretary reported the results of the election of Councilors as follow:

1st District.....H. E. Petersen, M.D., St. Joseph
3rd District.....J. W. Thompson, M.D., St. Louis

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5th District..... J. F. Jolley, M.D., Mexico
7th District..... E. C. Virden, M.D., Kansas City
8th District.....W. S. Sewell, M.D., Springfield
9th District..... E. C. Bohrer, M.D., West Plains

INSTALLATION OF THE PRESIDENT

Robert Mueller, M.D., St. Louis, was escorted to the platform by Drs. Curtis Lohr, St. Louis, and G. A. Aiken, Marshall, and was installed as President of the Association.

Dr. Mueller made the following committee appointments:

Scientific Work: W. A. Bloom, Fayette, Chairman; Associates: Victor B. Buhler, Kansas City; W. J. Stewart, Columbia; R. O. Muether, St. Louis.

Postgraduate Course: R. O. Muether, St. Louis, Chairman; Edward Massie, St. Louis.

Public Policy and Public Relations: Arie C. Van Ravenswaay, Boonville, Chairman; F. R. Crouch, Farmington; Armand D. Fries, St. Louis; Howard B. Goodrich, Hannibal; Associate: Cyril W. Schumacher, St. Louis.

Defense: Charles E. Hyndman, St. Louis, Chairman.

Medical Education and Hospitals: John S. Knight, Kansas City.

Cancer: E. Kip Robinson, Kansas City.

Medical Economics: Morris S. Harless, Kansas City; C. T. Herbert, Cape Girardeau.

Mental Health: E. F. Hoctor, Farmington, Chairman.

Maternal Welfare: J. L. Johnston, Springfield.

Infant Care: G. V. Herrman, Kansas City, Chairman; Eugene Schwartz, Springfield; Associate: Joseph C. Jaudon, St. Louis.

Health and Public Instruction: M. K. Underwood, Rolla; B. E. DeTar, Joplin.

Constitution and By-Laws: B. Landis Elliott, Kansas City, Chairman; J. H. Summers, Lebanon.

Fractures: W. J. Stewart, Columbia; N. S. Pickard, Kansas City; Associate: Jacob Kulowski, St. Joseph; B. L. Murphy, Hannibal.

Conservation of Eyesight: Robert Mattis, St. Louis; Associate: Winfred L. Post, Joplin; Philip Luedde, St. Louis; John McLeod, Kansas City; G. J. Tygett, Cape Girardeau; S. L. Freeman, Kirksville; H. B. Stauffer, Jefferson City; S. Albert Hanser, St. Louis; Anton J. Hummel, St. Louis.

Control of Venereal Disease: A. W. Neilson, St. Louis, Chairman; W. S. Sewell, Springfield.

Industrial Health: V. T. Williams, Kansas City, Chairman; Horace F. Flanders, Kansas City; Associate: Richard A. Sutter, St. Louis; H. M. Roebber, Bonne Terre.

Anesthesiology: Joseph McNearney, St. Louis, Chairman; O. T. Blanke, Joplin; J. J. Merz, St. Louis; Peter DeMaria, Kansas City; Charles White, Kansas City.

Physical Medicine: F. Garrett Pipkin, Kansas City.

Tuberculosis: E. E. Glenn, Springfield, Chairman; A. C. Henske, St. Louis; Lawrence E. Wood, Kansas City; J. L. Mudd, St. Louis; Paul Murphy, St. Louis; C. A. Brashear, Mount Vernon; Wilbur P. McDonald, St. Joseph; I. J. Flance, St. Louis; Florence E. MacInnis, Kansas City.

Study of Cardiac Diseases: Drew Luten, St. Louis; A. M. Estes, Jackson; Associate: J. William Fleming, Jr., Moberly; Glen W. Hendren, Liberty; C. Braxton Davis, Nevada; Arthur Strauss, St. Louis.

Donald M. Dowell, M.D., Chillicothe, reported for the Reference Committee on Constitution and By-Laws.

REPORT OF THE REFERENCE COMMITTEE ON CONSTITUTION AND BY-LAWS

The Committee recommends the amendment of the By-Laws changing the dues from $8.00 to $15.00. The Committee also recommends the amendment adding a Committee on Anesthesiology.

It is believed at this time that it is not desirable to create a section within the Missouri State Medical Association on obstetrics as there is a Committee on Maternal Welfare which has the privilege of participating in the Annual Sessions as evidenced by the excellence of the program of the 90th Annual Session. The Committee recommends that this resolution be tabled.

Upon motion, duly seconded, the two amendments were adopted.

Upon motion, duly seconded, the recommendation of the Committee that the resolution from the Committee on Maternal Welfare be tabled, was passed.

The Committee offered the following alternate resolution on the election of Councilors: It is recommended that the Council give consideration to the redistricting of the various districts to facilitate the election of Councilors from the districts at the regular meetings of multiple county units in recognition of the hyphenation of the several county organizations, and that Councilors be elected each two years from the membership at large rather than from the delegates who attend the Annual Sessions. It is requested that these changes be introduced at the next Annual Session.

Upon motion, duly seconded, this was adopted.

The Committee reported on the resolution on interim meetings of the House of Delegates as follows: Such a resolution be referred by the Speaker of the House to the Standing Committee on Constitution and By-Laws with instructions that the Committee prepare and submit to the next Annual Session the proper resolution for the revision of the sections in the Constitution and By-Laws which are, or may be affected by the resolution establishing an interim meeting of the House of Delegates in November of each year.

Upon motion, duly seconded, this was adopted.

Victor H. Scherman, M.D., St. Louis, reported for the Reference Committee on Miscellaneous Affairs.

REPORT OF THE REFERENCE COMMITTEE ON MISCELLANEOUS AFFAIRS

The Committee recommended the adoption of the resolution opposing the affiliation of Barnard Free Skin and Cancer Hospital with Washington University.

Upon motion, duly seconded, the resolution was adopted.

J. W. Thompson, M.D., St. Louis, presented the following resolution for the Council:

Resolved, That it is the recommendation of the Council to the House of Delegates that the American Medical Association be emphatically censured for its recent course of action in this regard; be it further

Resolved, That Secretary Lull and his lay committee acted hastily, without due consideration, in contrast to the welfare and best interests of the Medical Profession as a whole and our voluntary Blue Cross and Medical-Surgical Prepayment plans. Secretary Lull's letter of March 9, 1948, states in part: "Group Insurance for American Medical Association employees has to be purchased on a business, not a sentimental, basis; and that the new policy rate is cheaper by twenty-seven cents per person, per month." This is not in accordance with the complete benefits as interpreted by us, therefore be it further

Resolved, That even though a small, insignificant saving could be effected by purchasing commercial insurance, which we do not believe, there is no possible justification of this course of action on the part of the American Medical Association, which thereby discredits our voluntary prepayment plans, due to the fact that all commercial insurance companies will make capital of the fact that the American Medical Association itself has no confidence, and sees no economic virtues in our own plan, and due to the fact that we feel that the above course of action is a direct betrayal of our voluntary plans, and due to the fact that this action is contrary to the welfare of the Medical Profession and its affiliates, be it

Resolved, That the Missouri State Medical Association go on record recommending that this recent action of the American Medical Association be reconsidered, re-evaluated and be brought to the attention of the House of Delegates of the American Medical Association by the Missouri Delegates, that the injustice to the voluntary Blue Cross and Medical-Surgical prepayment plans be corrected, and be it further

Resolved, That the American Medical Association employees be immediately re-enrolled in the Blue Cross and Medical-Surgical prepayment plan.

Upon motion, duly seconded, the unanimous consent was given that the resolution be considered.

Upon motion, duly seconded, the resolution was adopted.

Upon request of Curtis H. Lohr, M.D., St. Louis, unanimous consent was given that a resolution be introduced.

The following resolution was introduced by Martyn Schattyn, M.D., St. Louis:

WHEREAS, The local chapter of the National Foundation for Infantile Paralysis has ordered that its Polio Treatment Center at the St. Louis County Hospital must be closed, effective March 31, 1948, and

WHEREAS, This Treatment Center is badly needed in St. Louis County, for Out-State patients, as well, and

WHEREAS, The proper disposition of the thirty-five patients in this center, and the 200 Out-Patients under treatment in the physiotherapy clinic cannot be effected in two weeks without unfavorable effect on these patients, and

WHEREAS, There are no facilities at other hospitals to insure the necessary care of these patients, therefore, be it

Resolved, That the House of Delegates of the 90th Annual Session of the Missouri State Medical Association request the National Foundation for Infantile Paralysis and its local chapter to rescind this order to close the Polio Treatment Center at the St. Louis County Hospital, or if this is not possible on account of the lack of funds, to effect the closure of the Center in a well planned, orderly manner, so that the future care of these patients will be assured, and be it further

Resolved, That a copy of this resolution be sent to the National Foundation, to its local chapter and to the daily press.

Upon motion, duly seconded, the resolution was adopted.

R. EMMETT KANE, M.D., St. Louis: I do not know how many of you are fortunate enough to have heard the speech of the President of the United States before the National Assembly at 11:30 today. In brief, the President of the United States announced a condition amounting to great emergency. Russia is named in the indictment. Attention was called to the fact that Russia, by her twenty-one vetoes has signified her intention of doing nothing to preserve the peace of the World; that she intends to wreck every thing that the United Nations was supposed to stand for. To meet this emergency, the President called for the passage of the Marshall law, the passage of a universal military training provision immediately and the reestablishment of the selective draft in a sufficiently limited number to immediately arm the armed forces of the United States.

This pronouncement was received with great enthusiasm as evidenced by the applause that he received from the assembled senators and representatives.

It impresses me that this is one of the few times, when I, for instance, have been in complete agreement with what the President of the United States has undertaken. When he is right, I think he should have a pat on the back. I think it would be a good public service if this body, before it adjourns, would entertain a motion to have a suitable officer forward a commendatory telegram to the President of the United States for his action in the National Assembly today.

Upon motion, duly seconded, it was voted that a telegram be sent to the President of the United States.

Upon motion, duly seconded, the House of Delegates adjourned *sine die*.

MEETING OF THE COUNCIL

The Council convened on March 17 following the final meeting of the House of Delegates with Robert Mueller, M.D., President, presiding.

The following officers were elected: Treasurer, C. E. Hyndman, M.D., St. Louis; Secretary, W. A. Bloom, M.D., Fayette; Chairman of the Council, J. W. Thompson, M.D., St. Louis; Vice Chairman of the Council, E. C. Bohrer, M.D., West Plains.

Advertisement



From where I sit
by Joe Marsh

How to Live Longer

Someone asked Pappy Miller last week how he stayed so spry at ninety. Pappy told him:

"Well, sir—when I work, I work hard. When I set, I set loose. When I think, I go to sleep."

According to Doctor Hollister, that formula isn't far amiss. "Hard work," he says, "never wore out anyone before his time, providing he knew how and when to relax."

Hollister himself works overtime, with his daytime patients at the office, and his evening calls. And when he gets home he takes it easy with a mellow glass of beer and chats with the missus until it's time to go to bed.

From where I sit, relaxing is certainly a fine art—especially in these tense, fast-moving times. And there's nothing just quite like a temperate glass of beer—enjoyed with pleasant company—to restore that easy frame of mind that one really needs after a hard day's work.

Joe Marsh

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MISSOURI STATE MEDICAL ASSOCIATION REGISTRATION AT NINETIETH ANNUAL SESSION

March 14, 15, 16, 17, 1948.

First Councilor District—28

Bauman, Henry C., Maryville
Berney, F. J., St. Joseph
Bloomer, G. T., St. Joseph
Bristow, A. S., Princeton
Bristow, Robt. B., Princeton
Broyles, W. A., Bethany
Byrne, J. I., St. Joseph
Carle, H. W., St. Joseph
Daley, F. R., Hamilton
Dowell, D. M., Chillicothe
Fisher, J. L., St. Joseph
Forgrave, L. P., St. Joseph
Hartigan, F. X., St. Joseph
Hendren, Glenn W., Liberty
Houck, Russell M., Excelsior Springs
Howden, T. L., St. Joseph
Jackson, W. R., Maryville
Kulowski, J., St. Joseph
Langhus, M. O., N. Kansas City
Moore, Walter R., St. Joseph
Parker, John Z., Pattonsburg
Petersen, H. E., St. Joseph
Settle, Emmett B., Rock Port
Vandiver, V. D., Chillicothe
Wadlow, E. E., St. Joseph
Wallace, Leo F., Stanberry
Wilson, Fred K., Winston

Second Councilor District—22

Andrae, R. L., Louisiana
Barnett, F. A., Paris
Bridges, J. R., Kahoka
Dixon, John R., Brookfield
Eggleston, D. E., Macon
Fleming, J. W. Jr., Moberly
Fleming, Thomas S., Moberly
Francka, W. F., Hannibal
Freeman, S. L., Kirksville
Gashwiler, J. S., Novinger
Goodrich, H. B., Hannibal
Greene, H. L., Hannibal
Hardesty, J. W., Hannibal
Harms, F. L., Salisbury
Jennings, P. W., Canton
Kibbe, J. H., Monroe City
Knowles, Roy F., Rolla
Landau, D. B., Hannibal
Murphy, B. L., Hannibal
Rowlette, A. P., Moberly
Smith, W. J., Hannibal
Wilcoxen, Wm. B., Bowling Green

Third Councilor District—292

Allen, Hollis N., St. Louis
Althans, Carl, St. Louis
Althaus, Carl J., St. Louis
Ambrose, Olney A., St. Louis
Anderson, DeWayne C., St. Louis
Arneson, A. N., St. Louis
Ayars, Treston R., St. Louis
Baron, Wm., St. Louis
Barrett, R. M. S., St. Louis
Bartlett, Robert, St. Louis
Bartlett, Willard Jr., St. Louis
Bartlett, Willard, St. Louis
Becker, Edward J., St. Louis
Berg, Ralph, St. Louis
Bieri, Earl J., St. Louis
Black, Wm. D., St. Louis
Bohne, Wm. R., St. Louis
Bowerman, Harold, St. Louis
Britt, Robert E., St. Louis
Brockelmann, Emmy Ross, St. Louis
Brockelmann, Erich, St. Louis
Broun, Goronwy O., St. Louis
Brown, Seymour, St. Louis
Buddy, E. P., St. Louis
Burford, Cyrus E., St. Louis
Burst, Emil A., St. Louis
Calkins, Delevan, St. Louis
Cameron, Solon, St. Louis
Carroll, George A., St. Louis
Clapp, Roger W., St. Louis
Coller, Fred C., St. Louis
Conrad, Adolph H., St. Louis
Correnti, Nicholas, St. Louis
Coughlin, B. D., St. Louis
Crossman, Robt. W., St. Louis
Crowe, John T., St. Louis
Danis, Peter G., St. Louis
Davis, Edgar W., St. Louis
Dmytryk, Eugene T., St. Louis
Dorsett, E. Lee, St. Louis
Doyle, Charels R., St. Louis
Doyle, Raymond E., St. Louis
Dunn, Edward H., St. Louis
Eber, Carl T., Richmond Hts.
Edele, Eugene H., St. Louis
Edwards, Edwin D., St. Louis
Edwards, Joseph C., St. Louis
Eidelman, Jack R., St. Louis
Eisele, Matthew B., St. Louis
Elmer, Warren P., St. Louis
Engman, Martin Jr., St. Louis
Ernst, Edwin C., St. Louis
Eto, Jackson, St. Louis
Eversoll, Norton Jr., St. Louis
Ewerhardt, F. H., St. Louis
Feldman, David, St. Louis
Ferris, Joseph L., St. Louis
Fineberg, Maxwell, St. Louis
Finley, F. L., St. Louis
Finnegan, Frank, St. Louis
Fitzgerald, Leo P., University City
Fletcher, Paul F., St. Louis
Flynn, J. E., Clayton
Forsen, James A., St. Louis
Foster, Howard M., St. Louis
Fox, Robert E., Webster Groves
Franklin, Max S., St. Louis
Freund, N. M., St. Louis
Freund, Samuel J., St. Louis
Fries, Armand D., St. Louis
Funsch, Edwin C., St. Louis
Furchtgott, Ludwig A., St. Louis
Gafney, George T., St. Louis
Gallagher, John F., St. Louis
Gay, Lee P., St. Louis
Gissy, C. J., St. Louis
Glassberg, B. Y., St. Louis
Glaze, Kenneth F., St. Louis
Glenn, Joseph E., St. Louis
Gorla, Wayne O., St. Louis
Grindon, Joseph Sr., St. Louis
Grogan, F. M., St. Louis
Gross, Joseph L. St., Louis
Hager, Victor K., St. Louis
Hall, Robert, St. Louis
Hamilton, C. K., St. Louis
Hampton, Stanley F., St. Louis
Hanser, S. Albert, St. Louis
Hanser, Theo. H., St. Louis
Hardy, Joseph A. Jr., St. Louis
Harell, Alex, St. Louis
Harkins, Wr. B., St. Louis
Hartnett, Leo. J., St. Louis
Hassett, Henry A., St. Louis
Head, John. F., St. Louis
Heinbecker, Peter, St. Louis
Henske, Andrew C., St. Louis
Herman, Morris, St. Louis
Hewitt, Walter, St. Louis
Hickey, Robert F., St. Louis
Hines, Paul, Webster Groves
Hobart, Carl, St. Louis
Holdenried, Wm. E., St. Louis
Hummel, Anton J., St. Louis
Hutto, Herman A., St. Louis
Hutton, Jos. L., St. Louis
Hyndman, C. E., St. Louis
Jaudon, Joseph C., St. Louis
Javaux, Everett J., St. Louis
Jolly, Wm. H., St. Charles
Jones, Andrew B., St. Louis
Jones, Otey S., St. Louis
Jordan, Edward J., St. Louis
Jordan, Walter R., St. Louis
Jorstad, Louis H., St. Louis
Kaminsky, David, Jefferson Barracks
Kane, R. Emmet, St. Louis
Kaplan, Albert, Normandy
Keller, Robert M., St. Louis
Kelly, R. Emmet, St. Louis
Kettelkamp, G. D., Koch
Keyes, E. L., St. Louis
Kienzle, Edw. C., St. Louis
King, Samuel J., St. Louis
Kirchner, W. C. G., St. Louis
Klein, Arnold G., St. Louis
Klein, Bert H., St. Louis
Klenk, Charles L., St. Louis
Klippel, B. W., St. Louis
Knight, Wm. A. Jr., St. Louis
Kohler, Eugene J., St. Louis
Koon, Bernard T., St. Louis
Kotkis, Alexander J., St. Louis
Kountz, Wm. B., St. Louis
Kouri, Martin F., St. Louis
Kraft, E. O., St. Louis
Kramolowsky, H. H., St. Louis
Kurz, R. F., St. Louis
Lane, Clinton W., St. Louis
Larsen, Kenneth V., St. Louis
Lawrence, John V., St. Louis
Lee, Elbert J. Jr., St. Louis
Leighton, Wm. E., St. Louis
Leydig, Stanley M., St. Louis
Lipman, Bernard S., St. Louis
Loeb, Virgil Jr., St. Louis
Loeffel, Ellen S., St. Louis
Lohr, Curtis H., St. Louis
LoPiccolo, Vincent J., St. Louis
Luedde, F. W., Ladue
Luedde, Philip S., St. Louis
Luedde, Wm. H., St. Louis
Luten, Drew, St. Louis
McCall, Edwin L., Brentwood
McEwen, John C., St. Louis
McMahon, Alphonse, St. Louis
McNalley, Frank P., St. Louis
MacBryde, Cyril M., St. Louis
Macko, Joseph R., St. Louis
Macon, Wm. L. Jr., St. Louis
Mattis, Robert D., St. Louis
Melick, Wm. F., St. Louis
Mendonsa, L. E., St. Louis
Merz, Jean, St. Louis
Michael, Vernon E., St. Louis
Millikin, L. A., St. Louis
Missey, Wilburn C. Jr., St. Louis
Moeller, Carl E., St. Louis
Moore, Neil S., St. Louis
Morris, Mary E., St. Louis
Morton, Paul C., St. Louis
Motzel, Albert J., St. Louis
Mountjoy, Grace S., St. Louis
Mowrey, Wm. O., St. Louis
Mueller, Robert, St. Louis
Mueller, Robert J., St. Louis
Muether, R. O., St. Louis
Munsch, A. P., St. Louis
Neilson, A. W., St. Louis
Neilson, Chas. H., St. Louis
Nemours, Paul R., Clayton
Newman, Harold G., St. Louis
Norton, W. H., St. Louis
O'Brien, R. M., St. Louis
O'Dowd, J. A., St. Louis
Olmsted, Wm. H., St. Louis
O'Malley, E. J., St. Louis
Oppenheimer, H. E., St. Louis
Orenstein, J. M., St. Louis
Patton, John F., St. Louis
Pearl, John F., St. Louis
Pelz, Mort D., St. Louis
Penney, David L., St. Louis
Pernoud, F. G. Jr., St. Louis
Pernoud, F. G., St. Louis
Pernoud, Michael F., St. Louis
Ploehn, Emma, St. Louis
Powell, R. V., St. Louis
Powers, Pierce W., St. Louis
Probstein, Jacob G., St. Louis
Pruett, Burchard, St. Louis
Pulliam, M. J., St. Louis
Raemdonck, Alphonse Jr., St. Louis
Rassieur, Louis, St. Louis
Rendleman, Geo. F., St. Louis
Ries, Douglas A., St. Louis
Riordan, Lawrence, St. Louis
Roberts, Harold K., St. Louis
Romendick, S. S., St. Louis
Rosenfeld, Henry, St. Louis
Rosenfeld, Herman, St. Louis
Ruddell, Geo. W., St. Louis
Ruhling, Rudy, St. Louis
Ryan, Linus M., St. Louis
Ryan, Robert E., St. Louis
Sale, Llewellyn, St. Louis
Scherman, Victor E., St. Louis
Schlossstein, A. G., St. Louis
Schlueter, Robert E., St. Louis
Schmiemeier, H. A., St. Louis
Schmiemeier, Roy H., St. Louis
Schmitz, Edgar F., St. Louis
Schnoebelen, P. C., St. Louis
Scholz, R. P., St. Louis
Schrepel, H. O., St. Louis
Schuchat, W. Louis, St. Louis
Schumacher, C. W., St. Louis
Sciortino, John S., St. Louis
Scopelite, Jos. A., St. Louis
Scott, E. P., St. Louis
Scott, Wendell G., St. Louis
Seddon, John W., St. Louis
Semon, E. Paul, St. Louis
Sewing, Arthur H., St. Louis
Sexton, Daniel L., St. Louis
Shackelford, H. H., St. Louis
Sherwin, Chas. S., St. Louis
Shutt, Cleveland H., St. Louis
Signorelli, A. J., St. Louis
Simon, Jerome I., St. Louis
Sinner, B. L., St. Louis
Smith, Frank J., St. Louis
Smith, Herbert P., St. Louis
Smith, J. Earl, St. Louis
Smith, Reuben, St. Louis
Smith, Warren F., St. Louis
Spivy, Raymond M., St. Louis
Spoeneman, Walter H., St. Louis
Steinberg, Franz U., St. Louis
Stewart, Floyd, St. Louis
Stolar, Jacob, St. Louis
Stryker, G. V., St. Louis
Stubbs, James B., St. Louis
Stutsman, Albert, St. Louis
Sullivan, Clement J., St. Louis
Sunderman, Raymond C., St. Louis
Swekoskv, F. J., St. Louis
Tainter, Frank J., St. Louis
Talbott, Hudson, St. Louis
Thompson, J. W., St. Louis
Thompson, L. D., St. Louis
Thompson, R. L., St. Louis
Thym, Henry P., St. Louis
Titterington, P. F., St. Louis
Uhlemeyer, Henry A., St. Louis
Vatterott, Paul B., St. Louis
Vaughan, J. R., St. Louis
Vezeau, S., St. Louis
Virant, J. A., St. Louis
Vitt, Alvin E., St. Louis
Vivona, Stefano, St. Louis
Vogt, Wm. H. Jr., St. Louis
Weber, Eugene P., St. Louis
Weinel, Francis G., St. Louis
Weis, Matthew W., St. Louis
Welch, Hooper W., St. Louis
Wentzel, Louis R., St. Louis
Werner, August A., St. Louis
Weyerich, Leon F., St. Louis
White, C. A., St. Louis
White, Orville O., St. Louis
Wiatt, Wm. S., St. Louis
Wiegand, Herbert C., St. Louis
Wilcox, C. V., St. Louis
Wilhelmi, Otto J., St. Louis
Wood, Wm. G., St. Louis
Woodruff, F. E., St. Louis
Woolsey, Robt. D., St. Louis
Wulff, Geo. Jr., St. Louis
Zeinert, Oliver B., St. Louis
Zeitler, Wm. T., St. Louis
Zillgitt, Geo. H., St. Louis
Zink, O. C., St. Louis

Fourth Councilor District—87

Armstrong, John H., St. Louis
Aylward, H. J., St. Louis
Backlar, Joseph, St. Louis
Bailey, Wm. H., St. Louis
Behan, Lawrence, O'Fallon
Berwald, Irwin I., St. Louis
Bone, Merle, Overland
Brown, Eugene R., University City
Brown, T. K., St. Louis
Canepa, F. J., St. Louis
Canty, Eugene J., St. Charles
Clay, Calvin, St. Charles
Compton, J. R., Clayton

Creech, J. C., Troy
Davis, I. R., St. Louis
Davidson, Morris, St. Louis
Denny, R. B., University City
Dowd, J. F., St. Louis
Dyer, Clyde P., Webster Groves
Finley, F. L., St. Louis
Flynn, George W., St. Louis
Fuchs, G. J., St. Louis
Gitt, Joseph J., St. Louis
Graeser, Richard, St. Louis
Hale, Tyre H., St. Louis
Hampton, O. P., Jr., St. Louis
Hardy, Guerdan, St. Louis
Hayden, Ralph O., St. Charles
Hendin, Aaron, St. Louis
Hengen, H. E., Pattonville
Hoelscher, H. F., Warrenton
Holden, R. F., St. Louis
Howe, L. F., St. Louis
Huck, Frank, Fenton
Huger, R. A., Wright City
Irick, C. C., Webster Groves
Jacobs, Gustave E., St. Louis
Jenkins, Jos. M., St. Charles
Jensen, Julius, St. Louis
Jones, Augustin, St. Louis
Jones, Garnett, St. Clair
Kingsland, Robert C., St. Louis
Koch, Otto W., Clayton
Leslie, Charles H., St. Louis
Levey, S. A., St. Louis
Mays, F. G., Washington
McNearney, Jos., Richmond Heights
Meador, James R., Clayton
Muench, L. O., Washington
O'Connell, John, St. Louis
Petersen, F. J., Richmond Heights
Prichard, John A., St. Louis
Rutledge, John F., Crystal City
Rutledge, P. E., Kirkwood
Sanders, C. E., St. Louis
Schattyn, Martyn, Kirkwood
Scheele, M. H., University City
Schmidt, C. A., Gerald
Schmidt, Herbert H., Washington
Schulz, Arthur E., St. Charles
Scott, H. F., Ballwin
Selle, H. C., St. Louis
Sharp, Cecil A. Z., St. Louis
Shepherd, C. T., Clayton
Silverberg, C., St. Louis
Skinner, J. S., St. Louis
Spitz, M. A., St. Louis
Stein, Harry J., St. Louis
Steiner, A. J., St. Louis
Sterling, Chas. E., St. Louis
Sterling, J. A., St. Louis
Stewart, F. H., St. Louis
Stoelzle, J. D., Kirkwood
Stuebner, R. W., St. Louis
Sutter, Richard A., St. Louis
Vitale, A. S., St. Louis
Vitale, N. S., St. Louis
Walther, Roy A. Jr., Overland
Walther, Roy A. Sr., St. Louis
Waters, E. B., St. Louis
Weitman, Maximiliam, St. Louis
Wepprich, M. S., Washington
Westrup, A. W., St. Louis
Westrup, E. A., Webster Groves
Whitener, Paul R., St. Louis
Williamson, O. E., St. Louis
Wyatt, Lois C., St. Louis

Fifth Councilor District—48

Adams, C. F., Jefferson City
Aldridge, M. R., Jefferson City
Allee, James W., Columbia
Allee, W. L., Eldon
Anderson, E. J. T., Montgomery City
Baker, James, Columbia
Baskett, Edgar, Columbia
Bloom, W. A., Fayette
Blumenschein, J. C., Columbia
Bruner, Claude R., Columbia
Burke, John P. Jr., California
Conley, Dudley S., Columbia
Cremer, W. J., Fulton
Dexheimer, Frank E., Columbia
Dorris, R. P., Jefferson City
Durst, Henry, Fulton
Dwyer, Thomas L., Mexico
Gillham, F. W., Jefferson City
Griffin, Fred, Mexico
Jolley, J. F., Mexico
Kallenbach, G. P., Mexico
Kanagawa, H., Jefferson City
Kelly, M. W., Jefferson City
Krause, I. B., Jefferson iCty
Latham, Kenyon S., California
LeMone, David V., Columbia
Leslie, J. P., Jefferson City
Loyd, H. O., Jefferson City
McCall, Wm. K., Laddonia
McComas, A. R., Sturgeon
Meinershagen, C. W., Jefferson City
Neal, M. Pinson, Columbia
Nifong, Frank G., Columbia
Ossman, J. A., Jefferson City
Overholser, M. D., Columbia
Shaw, W. J., Fayette
Shelton, Edw. O., Eldon
Simpson, Robt. H., Columbia
Stauffer, H. B., Jefferson City
Stephan, August, Jefferson City
Stewart, Wm. J., Columbia
Sugarbaker, E. D., Jefferson City
Summers, J. S., Jefferson City
Tate, Prentiss S., Fulton
Van Ravenswaay, A. C., Boonville
Washburn, J. L., Versailles
Wiley, Horace, Jefferson City
Wood, George F., Fulton

Sixth Councilor District—20

Aiken, G. A., Marshall
Campbell, A. J., Sedalia
Cooper, John M., Butler
Davis, C. B., Nevada
Dyer, D. P., Sedalia
Hansen, A. L., Appleton City
Haynes, R. C., Marshall
Hite, H. A., Green Ridge
Kelling, Douglas, Waverly
Kennedy, R. W., Marshall
Lawless, C. L., Marshall
Long, David S., Harrisonville
Maxson, Reed, Warrensburg
McBurney, C. A., Slater
Parker, H. F., Warrensburg
Potter, Reese H., St. Louis
Shy, M. P., Sedalia
Tracy, Herbert A., Belton
Walter, A. L., Sedalia
Wray, R. B., Nevada

Seventh Councilor District—54

Altringer, A. N., Kansas City
Asher, A. Graham, Kansas City
Berrey, Bedford H., Kansas City
Birenboim, Irvin M., Kansas City
Boughnou, H. P., Kansas City
Brams, Jack B., Kansas City
Bruner, Robert E., Kansas City
Buckingham, W. W., Kansas City
Buhler, Victor B., Kansas City
Carmichael, F. A. Jr., Kansas City.
Casford, Ralph, Kansas City
Cox, Kenneth E., Kansas City
Counsell, Chester M., Kansas City
Duncan, Ralph E., Kansas City
Dwyer, H. L., Kansas City
Eldridge, Chas. J., Kansas City
Elliott, B. Landis, Kansas City
Frick, J. P., Kansas City
Gilkey, Harry M., Kansas City
Gist, Wm. W., Kansas City
Gist, Wm. L., Kansas City
Greene, W. Wallace, Kansas City
Hamilton, Hugh G., Kansas City
Herrman, George, Kansas City
Hoffman, Jacob S., Kansas City
Hoffmann, Robt. L., Kansas City
Hogue, Frank S., Kansas City
Hunter, Martin P., Kansas City
Knight, John S., Kansas City
Kranson, S. J., Independence
Krueger, Owen, Kansas City
Lamar, Robt. F., Kansas City
Lapp, Harry C., Kansas City
Lemoine, A. N., Kansas City
Lemoine, A. N. Jr., Kansas City.
McAlester, A. W. Jr., Kansas City
McLeod, John, Kansas City
McVay, James R., Kansas City
MacInnis, Florence, Kansas City
Morest, F. Stanley, Kansas City
Myers, W. Eugene, Kansas City
Pipkin, F. Garrett, Kansas City
Rice, Grover C., Brunswick
Rinkel, Herbert J., Kansas City
Robinson, G. Wilse Jr., Kansas City
Simpson, Morris B., Kansas City
Singleton, John M., Kansas City
Steffen, Lawrence F., Kansas City
Sutton, Richard L., Kansas City
Trowbridge, B. C., Kansas City
Virden, C. Edgar, Kansas City
Williams, V. T., Kansas City
Wortmann, Robt. F., Kansas City
Ziegler, A. Melvin, Kansas City

Eighth Councilor District—45

Beers, E. G., Seymour
Bickel, Vern T., Lamar
Blanke, O. T., Joplin
Bowman, Melvin, Neosho
Callaway, Guy D., Springfield
Cardwell, C., Stella
Coffelt, Kenneth C., Springfield
Cole, Paul F., Springfield
Culbertson, Wm. F., Springfield
DeTar, B. E., Joplin
Dickman, Roy, Mt. Vernon
Farthing, Fred R., Springfield
Ferguson, John P., Springfield
Ferrell, Thomas E. Jr., Springfield
Glasco, Loren A., Richmond Heights
Glenn, E. E., Springfield
Glover, Kenneth, Mt. Vernon
Grantham, S. A., Joplin
Griffin, Evelyn, Buffalo
Griffin, Olin A. Jr., Buffalo
Hamilton, E. H., Joplin
Hargrove, Fred T., Springfield
H'Doubler, Francis T., Springfield
Hoover, H. Lee, Springfield
Johnston, J. L., Springfield
Kerr, H. L., Crane
Klingner, Geo. M., Springfield
Macdonnell, C. R., Marshfield
Newman, Geo. W., Cassville
Newkirk, R. C., Joplin
Rainwater, E. H., Springfield
Roper, Stanley D., Ozark
Schulte, G. A., Joplin
Schwartz, E. J., Springfield
Sewell, Walter S., Springfield
Silsby, Don J., Springfield
Smith, C. Souter, Springfield
Smith, Wallis, Springfield
Threadgill, J. M., Forsyth
Tillman, Walter W. Jr., Bolivar
Vail, A. Denton, Springfield
Webb, L. R., Springfield
Williams, John W., Springfield
Wood, George, Carthage
Yancey, Daniel L., Springfield

Ninth Councilor District—18

Bohrer, E. C., West Plains
Breuer, Robert E., Newburg
Breuer, Wm. H., St. James
Buckthorpe, Thelma, Waynesville
Callihan, C. F., Willow Springs
Cotton, T. W., Van Buren
Davis, Harry H., Rolla
Everist, Guy V., Rolla
Frame, Homer, Mountain Grove
Hammler, Christiana V., St. James
Henson, L. L., Bunker
Hogg, Garrett Jr., Cabool
Randall, Leslie, Licking
Roock, Paul C., Richland
Smith, Rollin H., West Plains
Stricker, Emil A., St. James
Summers, J. H., Lebanon
Underwood, M. K., Rolla

Tenth Councilor District—36

Appleberry, C. H., Flat River
Appleberry, Dailey, River Mines
Ashley, Hugh V. Jr., Cape Girardeau
Bailey, S. M., Malden
Baldwin, Paul, Kennett
Barron, W. Harry, Fredericktown
Bredall, Jerome, Perryville
Bugg, Andrew, Ellington
Bull, Ben M., Ironton
Carron, Oscar A., Perryville
Cofer, James C., Kennett
Crouch, F. Richard, Farmington
Dorris, George T., Illmo
Elrod, Dennis B., Cape Girardeau
Estes, A. M., Jackson
Finney, W. O., Chaffee
Fonda, J. W., Poplar Bluff
Gibson, O. J., Cape Girardeau
Grossman, Marvin, Fredericktown
Hall, Frank W., Cape Girardeau
Harwell, J. Lester, Poplar Bluff
Henrickson, H. M., Poplar Bluff
Herbert, C. T., Cape Girardeau
Hoctor, Emmett F., Farmington
Husted, G., Parma
Killion, John J., Portageville
Luten, J. B., Caruthersville
Macauley, B. J., Gerald
Nussbaum, Paul B., Cape Girardeau
Oehler, Wm. F., Cape Girardeau
Post, Cyril A., Poplar Bluff
Roebber, H. M., Bonne Terre
Spence, E. L., Kennett
Taylor, Van W., Bonne Terre
Touhill, Neal J., Dexter
Tygett, Glenn J., Cape Girardeau

Guest Speakers—6

Horton, Bayard, Rochester, Minn.
Johnston, Charles, Detroit, Mich.

Jordan, L. S., Granite Falls, Minn.
Mengert, Wm. F., Dallas, Tex.
Ricketts, Henry T., Chicago, Ill.
Smith, Tom E., Dallas, Tex.

Visiting Physicians—80

Abbott, Walter, Des Moines, Ia.
Abrams, Julian E., Scott Field, Ill.
Adin, Louis E., St. Louis
Alexander, Walter, St. Louis
Attridge, Frank R., St. Louis
Banet, Samuel R., St. Louis
Barnett, N. H., St. Louis
Barrow, John T., St. Louis
Beasley, Charles H., St. Louis
Bennett, C. E., Springfield
Bina, Francis, St. Louis
Brinton, T. F., Scott Field
Brockbank, Mark J., Salt Lake City
Burlingame, C. C., Hartford, Conn.
Clark, Donald, East St. Louis, Ill.
Crouse, J. C., St. Louis
Davis, Harry J., Topeka, Kas.
Davis, Phil, St. Louis
Donahue, J. J., E. St. Louis, Ill.
Donley, L. F., St. Louis
Dreyer, C. J., St. Louis
Duryee, Merle, St. Louis
Fraser, R. G., St. Louis
Gatewood, John W., Omaha, Nebr.
Gay, George C., St. Louis
Grubin, L. Melvin, Scott Field
Hanford, C. W., St. Louis
Harris, Robert, Stella
Hooker, L. T., Jefferson Barracks
Hunt, R. B., St. Louis
Ivers, Geo. U., Fargo, N. D.
Johnson, Jos. E., St. Louis
Jones, M. F., St. Louis
Kelso, Jos. W., Oklahoma City, Okla.
Kimelman, N., Jefferson Barracks
Kinsella, Dalton L., St. Louis
Kuffel, Mark J., Quincy, Ill.
Lewis, Jos. F., Columbus, Miss.
Lieberman, Daniel, Santa Barbara, Calif.
Lowry, T. M., St. Louis
Lutors, Frank, Nashville, Tenn.
McGinnis, Kenneth, St. Louis
Manganaro, Frank, Jefferson Barracks
Merideth, John A., Cobden, Ill.
Miloslavich, E. L., St. Louis
Naryka, J. J., Belleville, Ill.
Odess, J. S., St. Louis
Pierce, Paul P., Alton, Ill.
Pokorny, Alex D., Topeka, Kansas
Reiley, Carl N. Jr., St. Louis
Renda, M. F., St. Louis
Riley, J. J., St. Louis
Rinne, Ralph H., E. St. Louis, Ill.
Ritchel, L. F., St. Louis
Ritter, H. A., St. Louis
Robertson, A., St. Louis
Ross, Charles, University City
Schaefer, Leo. J., Salina, Kas.
Schlenker, J., St. Louis
Schmitt, Herbert S., St. Louis
Schoemaker, D. M., Webster Groves
Shea, Edward, St. Louis
Shrader, D. A., St. Louis
Soss, Thomas L., St. Louis
Spaulding, Robt. W., St. Louis
Spitzer, Ernest, St. Louis
Streicher, D. L., Jefferson Barracks
Sutton, James A., St. Louis
Sweeney, Wm. C., St. Louis
Szczukowski, Myron, St. Louis
Tashnek, A. B., St. Louis
Taylor, Byron, Scott Field
Thoma, George, Clayton
Truhlsen, S. M., Scott Field
Vigo, Anthony, St. Louis
Vine, Sherwood, Scott Field
Warmack, Ralph E., Southwest City
White, Edward O., Scott Field
Williams, Jos. C., Kansas City
Williams, Maybelle, Alton, Ill.

Physicians Registered—736

Visitors—166

Alawel, Norma, St. Louis
Armstrong, N. L., St. Louis
Bauer, R. A., St. Louis
Benincasa, Julia, St. Louis
Benson, Ann, St. Louis
Blair, Robt. K., Houston, Tex.
Bonfani, Albert L., St. Louis
Bryden, Betty, St. Louis
Bugni, L. D., St. Louis
Buvinger, W. J., St. Louis
Byrne, J. E., St. Louis
Byrne, Mrs. J. I., St. Joseph
Cabanas, K. Ocasio. St. Louis
Callahan, D. E., St. Louis
Calovich, Emery, St. Louis
Carr, Dorothy, Kansas City
Caywood, D. E., Springfield
Champlin, Gerald A., St. Louis
Clark, C., St. Louis
Comfort, Ellen, R. N., St. Louis
Counsell, Mrs. C. M., Kansas City
Craig, Lee, St. Louis
Cramer, Mrs. W. J., Fulton
Cranfield, C. C., St. Louis
Culbertson, Mrs. Wm. F., Springfield
Curran, John, St. Louis
Dames, Agnes, St. Louis
Dexheimer, Mrs. Frank, Columbia
Donaldson, R. C., St. Louis
Dyer, Mrs. D. P., Sedalia
Eames, Dan H., Lemay
Eichmeyer, Virginia, Washington
Engelhardt, R. C., St. Louis
Estes, Mrs. A. M., Jackson
Everist, Mrs. Guy V., Rolla
Farres, Geo. H., St. Louis
Farris, Henry G., St. Louis
Faust, Joseph, St. Louis
Fineberg, Mark, University City
Fisher, Mrs. J. L., St. Joseph
Fleming, R. J., St. Louis
Florek, Florian, St. Louis
Flotte, S. A., St. Louis
Freesmeier, Elizabeth, St. Louis
Fritschel, G. C., Dubuque, Ia.
Gaffney, Raymond Z., St. Louis
Garfinkel, Howard J., St. Louis
Gaul, Louis A., St. Louis
Gibbs, Harry C., St. Louis
Gibson, Mrs. O. J., Cape Girardeau
Goodrich, Mrs. H. B., Hannibal
Gordils, Ortiz, St. Louis
Graham, E. A., St. Louis
Greene, Mrs. H. L., Hannibal
Grimm, Huber K., St. Louis
Gross, Mrs. Jos. L., St. Louis
Haas, Charles, St. Louis
Hackney, J. D., Ferguson
Hadcock, Wm., St. Louis
Hall, O. E., St. Louis
Hansen, Mrs. A. L., Appleton City
Hansen, Joseph, Appleton City
Hansen, Norma, Appleton City
Hargrove, Mrs. Fred, Springfield
Harwood, H. N., St. Louis
Hirsch, Edward, St. Joseph
Hodge, Kenneth, St. Louis
Hoffman, Charles L., St. Louis
Hudak, John, St. Louis
Iungerich, Frank L., Webster Groves
Jacobi, Hansi, St. Louis
Jacobson, Donald, St. Louis
James, C. R., St. Louis
Justus, J. B., St. Louis
Kehr, Harrison, St. Louis
Keller, Marie, R. N., St. Louis
Kelly, P. J., St. Louis
Kennett, Ruth, Kansas City
King, C. H., St. Louis
Kinman, Lindell, St. Louis
Kohlberg, L. G., St. Louis
Krause, Mrs. I. B., Jefferson City
Lamb, Sam E., St. Louis
Lawton, J. T., St. Louis
Leb, Samuel, St. Louis
Lieb, F., St. Louis
Loomis, Gordon, St. Louis
Loranz, Mr. C. P., Birmingham, Ala.
McCabe, L. B., St. Louis
McClure, W., St. Louis
McConnell, Lois L., Louisville, Ky.
McLeod, Mrs. John, Kansas City
McPhee, Roderick, St. Louis
MacNaughton, R. A., St. Louis
Maher, T. F., Normandy
Markivee, Carroll, St. Louis
Mathis, J. L., St. Louis
Mihan, Richard, St. Louis
Morrison, A. F., Clayton
Morton, Mrs. Paul, St. Louis
Mueller, Travis, St. Louis
Neilson, Mrs. A. W., St. Louis
Neilson, Mrs. Chas. H., St. Louis
Nelson, E. R., St. Louis
Nelson, Olava T., St. James
Nickles, Mrs. Ed., St. Louis
Nifong, Mrs. Frank G., Columbia
North, Elsie, St. Louis
Nussbaum, Mrs. Paul B., Cape Girardeau
O'Donnell, J. V., St. Louis
Oehler, Mrs. W. F., Cape Girardeau
Olive, J. T., St. Louis
O'Neil, Bob, St. Louis
Painter, John H., St. Louis
Paradice, J. R., St. Louis
Paradise, N., St. Louis
Paul, James M., St. Louis
Pavilonis, Bernard, Cleveland, Ohio
Pereyra, L. A., St. Louis
Phelps, Harvey W., St. Louis
Picchi, Joseph, St. Louis
Pinkstaff, J. T., St. Louis
Ploussard, J. H., St. Louis
Pokorny, Mrs. A. D., Topeka, Kansas
Primm, Janet, St. Louis
Pucci, G. L., St. Louis
Rafferty, Frank, St. Louis
Raley, B. V., Little Rock, Ark.
Rawlins, Fred, St. Louis
Redington, James C., St. Louis
Rice, Mrs. G. C., Brunswick
Richmond, John, St. Louis
Riley, Philip A., St. Louis
Reinderer, Dorothy, St. Louis
Roberts, Charles, St. Louis
Rohrbach, Mrs. Ester, St. Louis
Rosenberg, Fay, St. Louis
Ruby, Robt. H., Jefferson City
Sanderlin, J., St. Louis
Schierman, W. D., St. Louis
Schmid, Margaret H., St. Louis
Schmidt, Ed., St. Louis
Schmidt, Elizabeth, St. Louis
Smith, Paula, Rolla
Smith, Mrs. Tom E., Dallas, Texas
Sommer, Ann J., St. Louis
Splitter, S. D., St. Louis
Stephens, Jessie M., St. Louis
Stevens, R. E., St. Louis
Stewart, B. G., St. Louis
Summers, Mrs. J. S., Jefferson City
Tashnek, Mrs. A. B., St. Louis
Taylor, B. M., St. Louis
Tess, John, St. Louis
Thomas, William, St. Louis
Tremblay, Wyman C., St. Louis
Tygett, Mrs. Glenn J., Cape Girardeau
Vaeth, Jerome, St. Louis
Walter, Karl, St. Louis
Walterscheid, John, St. Louis
Warsing, Jane, Licking
Wiedle, Herma, St. Louis
Wiley, Mrs. Horace, Jefferson City
Wonka, Richard, St. Louis
Wood, Mrs. Geo. F., Fulton
Woodward, Glenn W., St. Louis

Exhibitors—170

Abbott, John D., New York
Adams, E. V., Shawnee, Kas.
Allen, Paul T., New York
Anderson, M. L., St. Louis
Anderson, R. L., Kansas City
Atwater, Roy C., St. Louis
Bartee, H. E., Mobile, Ala.
Bauer, Louis, St. Louis
Bauman, Carl S., St. Louis
Benneker, G. H., New York
Bergstrom, M. H., New York
Beyreuther, P. F., St. Louis
Blankenbaker, H. L., Indianapolis
Braden, T. E., Kansas City
Bradney, C. H., New York
Breckenkamp, A. W., St. Louis
Bresnan, J. J., St. Louis
Brown, A. Elmore, Richmond Heights
Brueggemann, W. F., St. Louis
Burchfiel, E., Indianapolis
Carey, C. W., Rahway, N. J.
Carter, Mrs. John H. Jr., Webster Groves
Cason, W. N., Webster Groves
Clark, Charles H., St. Peter, Minn.
Clark, Mrs. Charles H., St. Peter, Minn.
Craig, Paul O., Wichita, Kans.
Cusick, Wm. J., St. Louis
Cutney, M., St. Louis
Damuth, H. F., Philadelphia, Pa. 8
Danforth, F., Indianapolis
Dau, Carol, St. Louis
Dawdy, Wm. D., Greenville, Ill.
Dean, John M., St. Louis
Dobbins, E. C., St. Louis
Dumas, E. L., St. Louis
Edward, George A., St. Louis
Ellaby, Chas, St. Louis
Evans, Glen, St. Louis
Fassel, Neil J., St. Louis
Ferris, Harry, Chicago
Fischbeck, Carl, St. Louis
Fossieck, Byron E., Summit, N. J.
Foster, Howard, New York
Frenz, J., St. Louis
Gaffney, S. A., Rahway, N. J.
Gieseking, Wm. H., Indianapolis
Gilbert, Wallace R., St. Louis
Goins, George B., Kansas City
Goldklang, M., Kansas City
Graebner, Paul, Kansas City
Grandy, R. R., Chicago
Greb, Gordon, Kansas City
Guker, J. W., St. Louis
Haines, A. K., St. Louis
Haines, Albert, St. Louis
Hamilton, C. S., St. Louis
Hanley, Edmund F., St. Louis
Hansen, Ralph E., New York
Hartwell, Warren S., Norwich, N. Y.
Hassfurther, O. J., St. Louis
Hayden, R. L., Kansas City
Head, J. F., Brookfield
Herpel, George L., St. Louis
Hine, R. J., Kansas City
Holzapfel, Paul, Lynchburg, Va.
Horne, G. V., St. Louis
Hoskins, William, St. Louis

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Ilg, C. J., St. Louis
Illert, James, St. Louis
James, T. D., St. Louis
Jenkins, John, St. Louis
Jordan, Dr. W. H., Kansas City
Kallaher, E. J., St. Louis
Kemper, A. H., St. Louis
Keppler, R. C., St. Louis
Koehler, Dale, St. Louis
Kotkis, Alex, St. Louis
Kotkis, Irene, St. Louis
Kotthcoff, Chris J., St. Louis
Lansberg, F. B., St. Louis
Leahy, Crawford, Chicago
Lence, Fred J., St. Louis
Lieder, A. J., Indianapolis
Lindh, Wm. C., St. Louis
Lott, D. C., Ferguson
Love, Jack W., St. Louis
Love, Mrs. J. W., St. Louis
Lueke, K. W., St. Louis
Luly, Herman L., St. Louis
Mahan, C. A., St. Louis
Marlotte, E. J., St. Louis
Marx, Arthur, St. Louis
Maxwell, Donald, Los Angeles, Calif.
McBride, H., Ferguson
McCloud, Harry A., Los Angeles, Calif.
McGlothing, Paul, St. Louis
Meinhardt, Frederick, St. Louis
Melhinch, Seth L., Kansas City
Mendenhall, N. M., St. Louis
Merod, Virgil, St. Louis
Miller, H. W., St. Louis
Moore, Edward W., St. Louis
Morris, Charles L., Wenonah, N. J.
Morris, Geo. W. Jr., St. Louis
Morton, Fred, St. Louis
Nack, H. P., St. Louis
Nehring, Fred W., St. Louis
Nelson, Fred, Kansas City
Nickel, K. G., St. Louis
O'Connor, J. M., Chicago
Osborne, B. T., Shrewsbury
Pandolfo, Mario A., Bloomfield, N. J.
Parish, Clifford, Tuckahoe, N. Y.
Patterson, L. J., Kansas City
Paul, Mrs. Blanche, Indianapolis
Pennock, E. A., Chicago
Pingree, Miss Hazel, St. Louis
Poston, R. F., Chicago
Redick, Charles, St. Louis
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Rennick, Laurie, St. Louis
Riedel, Harry, St. Louis
Rudert, K., St. Louis
Ruegg, Fred W., St. Louis
Ryan, James X., St. Louis
Scherck, Henry J., St. Louis
Schmidt, Frank, St. Louis
Schneeberger, F. C., St. Louis
Schultes, A. A., St. Louis
Schwab, E. F., St. Louis
Scott, W. C., Kansas City
Searle, Fred W., St. Louis
Sessler, Ralph, St. Louis
Sheets, M. C., Kirkwood
Smith, H. P., St. Louis
Smith, Nick G., St. Louis
Smith, Ray, Rock Hill
Squires, A. B., St. Louis
Suhrheinrich, Wm. H., Evansville
Sullivan, A. H., St. Louis
Suppiger, W. B., St. Louis
Thomas, James M., St. Louis
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Timmons, W. H., Kansas City
Tiefer, Oliver, St. Louis
Townley, Burk, St. Louis
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Walsh, Francis X., St. Louis
Wandell, C. B., Kansas City
Wassem, O. A., St. Louis
Weatherly, John R., St. Louis
Wheelhouse, V. R., St. Louis
Willmann, Wayne, Philadelphia, Pa.
Wirthlin, E. M., St. Louis
Wise, A., St. Louis
Wolff, Stephen J., St. Louis
Wright, L. L., St. Louis
Wurmb, Ted, St. Louis
Yevak, Edward, Leavenworth, Kas.

Total Registration—1072

THE COUNCIL

The Council met at the Sheraton Hotel, St. Louis, on June 5 and 6, with J. W. Thompson, St. Louis, Chairman, presiding. Those present were: H. E. Petersen, St. Joseph; W. F. Francka, Hannibal; Otto W. Koch, Clayton; J. W. Thompson, St. Louis; J. F. Jolley, Mexico; R. W. Kennedy, Marshall; E. C. Virden, Kansas City; W. S. Sewell, Springfield; E. C. Bohrer, West Plains; Robert Mueller, St. Louis; Wallis Smith, Springfield; W. A. Bloom, Fayette; G. V. Stryker, St. Louis; R. E. Schlueter, St. Louis; Howard B. Goodrich, Hannibal; James R. McVay, Kansas City; Mr. W. H. Bartleson, Kansas City; John Williams, Jefferson City; Curtis H. Lohr, St. Louis; Carl F. Vohs, St. Louis; Everett D. Sugarbaker, Jefferson City; E. C. Ernst, St. Louis; Mr. George Larson, St. Louis; Llewellyn Sale, St. Louis; Mr. Raymond McIntyre, St. Louis; Mr. T. R. O'Brien, St. Louis.

A letter was read from a component society discussing a difficulty over fees in Workmen's Compensation cases. After discussion, it was decided to refer this to the Committee on Medical Economics who should transmit information to the society on how to handle this on a local basis.

The letter services on medical interests in the national Congress were discussed including Marjorie Shearon, the Washington Reports on Medical Science and the Bulletin of the American Medical Association. After discussion it was decided to write to Dr. Lawrence suggesting that the style of the bulletins be changed so that material would be more readable and that important things would stand out by being on different colored stationery or some such way. Upon motion of Dr. Petersen it was voted not to subscribe to any of the services.

A form was presented which the Missouri Congress of Parents and Teachers asked to have approved for the examination of school children. After discussion in which it was brought out that the form was not the important thing, but education of the people, the form was approved temporarily upon motion of Dr. Kennedy.

A letter from Dr. J. Earl Smith and a resolution asking for representation of public health physicians on the Committee on Health and Public Instruction was read. After discussion as to whether appointing associate members to the committee would be the thing desired, upon motion of Dr. Petersen, it was left to the Chairman of the Council, the President and the Executive Secretary to work out and have power to act.

A component society asked for clarification as to dues of men now in military service. After discussion, upon motion of Dr. Smith, this was referred to the Committee on Constitution and By-Laws with the request that it obtain information as to how other states are handling this and report to the Council with recommendation.

Upon the request of the Woman's Auxiliary the following Advisory Committee to the Woman's Auxiliary was approved: M. Pinson Neal, Columbia; W. L. Allee, Eldon; August A. Werner, St. Louis.

The rules of the proposed student loan fund of the Woman's Auxiliary were presented. It was thought that the clause concerning giving preference to a physician's family should be deleted and that a note should be signed at the time the student received the money. Upon motion of Dr. Mueller, the rules were approved with these two exceptions. It was also suggested that the Auxiliary be told that the Council heartily endorses this work. Loan funds in other states were discussed and it was suggested that some money be made available to the Auxiliary for this purpose. After discussion, upon motion of Dr. Petersen, it was voted to discuss this with the Woman's Auxiliary as to their wishes and that it be referred back to the Council.

The Treasurer's report on the financial status of the Association was approved.

The present bill in Congress which includes physicians in the possibility of drafting was discussed. Dr. McVay pointed out that he felt this was based to some extent on the difference of opinion of the various surgeons general as to the number of physicians needed per 1,000 military personnel. Dr. Mueller explained that a precedent was set in the last war in which no physicians were inducted more than 38 years of age.

The vetoing of the recent bill clarifying the Cancer Commission's direct control of the Cancer Hospital was discussed. Upon motion of Dr. Virden, this was referred to the Committee on Cancer to study and work on with the Executive Secretary.

Dr. Park White, St. Louis, presented a request that the Council approve and recommend to the Committee on Publication that the report of the survey conducted in Missouri by the Academy on Pediatrics be printed as a supplement to The Journal. Upon motion of Dr. Smith, this was referred to the Committee on Publication.

The following report on the program for the 1949 Annual Session was presented by Dr. Bloom: The Committee on Scientific Work met in May and has been in



Impetigo and ecthyma usually respond rapidly to topical Furacin therapy. Good results have been reported in 49 of 55 cases of impetigo[1,2,3] and in several cases of impetigo about infected wounds.[4] Ecthyma responded favorably in 19 of 24 cases.[1,2] Cure of these pyodermas is often effected within eight days. Furacin N.N.R., brand of nitrofurazone, is available as Furacin Soluble Dressing and as Furacin Solution, both containing 0.2 per cent Furacin.® These preparations are indicated for topical application *in the prophylaxis or treatment of infections of* wounds, second and third degree burns, cutaneous ulcers, pyodermas and skin grafts. *Literature on request.* **EATON LABORATORIES, INC., NORWICH, N.Y.**

1. Downing, J. G., Hanson, M. C. and Lamb, M.: Use of 5-Nitro-2-Furaldehyde Semicarbazone in Dermatology, J.A.M.A. *133*:299, 1947 **2.** Robinson, H. M. and Robinson, H. M., Jr.: The Comparative Values of Some New Drugs in the Pyodermas, South. M. J. *40*:409, 1947 **3.** Miller, J., Rodriquez, J. and Domonkos, A.: Evaluation of Penicillin in Topical Therapy, New York State J. Med. *47*:2316, 1947 **4.** McCollough, N. C.: Treatment of Infected War Wounds with a Nitrofuran. Indust. Med. *16*:128, 1947.

touch by correspondence since that time. The program for the 1949 Session already is shaping up well. As you know, cards were sent to all members asking for suggestions on the program. These were classified and the program planned is based on what the membership wishes. In the subjects in which requests predominated, symposia or panels have been arranged. Other subjects will be covered by individual papers.

An outline of the program as it is being worked out is: On Monday morning, a symposium on "Coronary Disease" which is being arranged in cooperation with the Missouri Heart Association; Monday afternoon will be individual papers on "Undulant Fever," "Psychomatic Medicine in General Practice," "X-ray in the Diagnosis of the Right Upper Quadrant," and "Genitourinary Surgery."

On Tuesday morning a program of individual papers will be presented on "Modern Concepts of Tuberculosis," "Diabetes," "Cancer of the Uterus" and "Gastric Pain" from the medical and the surgical standpoints. On Tuesday afternoon a panel on "Trauma" will be given, the panel to be made up of plastic surgeons, general surgeons, orthopedists and neurosurgeons.

On Wednesday morning a symposium on "Obstetrics" will be given which will be a little broader than the one this year, including pediatrics so far as the newborn child is concerned and more medical aspects.

In all subjects on which there is a committee of the Association or an active organization, selection of speakers has been discussed with them.

A letter from the state office of the Treasury Department U. S. Savings Bonds Division was presented asking that the Association cooperate in getting out a letter to members concerning the drive which will end June 30. Upon motion of Dr. Smith, it was voted to do this.

A letter from the American Association of Blood Banks asking to be endorsed by the Association was presented. The Red Cross program was discussed and it was pointed out that the A. M. A. had endorsed the Red Cross program. Upon motion of Dr. Jolley, it was voted to appoint a committee which would study the situation of blood banks and report their findings to the Council. The following committee was appointed: R. O. Muether, St. Louis, Chairman; James Baker, Columbia; W. S. Sewell, Springfield; Victor B. Buhler, Kansas City; Henry Allen, St. Louis.

The two resolutions passed by the House of Delegates for presentation to the House of Delegates of the A. M. A., one concerning the A. M. A. discontinuing the use of Blue Cross and Blue Shield, the other the condemning of schools and hospitals practicing medicine as a corporation were discussed briefly. Dr. Schlueter and Dr. Goodrich requested that members from Missouri be present at the meetings of the reference committee to which these resolutions are referred and assist in getting action on them. Upon motion of Dr. Bloom, it was voted that the Council in addition should designate certain men to be present.

The divergence of medical testimony on the witness stand by different physicians was discussed. It was pointed out that in Minnesota and in Illinois plans had been worked out in conjunction with the Bar Associations which made for better medical testimony. Upon motion of Dr. Mueller, it was voted to appoint a committee, not necessarily from the Council, to study the situation on medical testimony in this state, probably in conjunction with the Bar Association, and recommend a plan for Missouri.

Dr. Ernst reported that the cancer work in the state was progressing cooperatively and that initial efforts in the work would be made first in three localities: Cape Girardeau, Joplin and Springfield. Upon motion of Dr. Virden, it was voted that the Council approve the work and that it should transmit to the various centers that there has been proposed a clinic for that location and that the Council would like to have cooperation in starting this work.

Mr. McIntyre reported meetings held by county societies, groups of societies and councilor district meetings since the last Council meeting. He reported that a dinner meeting for interns and residents in Kansas City and St. Joseph has been held in Kansas City with much interest shown by the interns and residents present. It was decided that a meeting should be held in St. Louis but that such meetings should be held earlier in the year.

Dr. Lohr reported that the present contract with the Veterans Administration expires June 30 and that a new contract had been submitted by the Administration. The Committee on Veterans Care had approved the new contract. Upon motion of Dr. Petersen, the Council gave authorization to sign the contract.

It was announced that the Council on Medical Service will meet in Chicago on June 19 and it was suggested that Drs. Vohs, Lockwood, Thompson and Virden attend this meeting. Dr. Vohs reported briefly on the recent meeting of the AMCP and Blue Cross in Los Angeles.

Dr. Williams asked the opinion of the Council on the use of the 70 mm. film alone or in connection with 14 by 17 films in suspicious cases. After discussion, upon motion of Dr. Virden, Dr. Williams was advised to use only the 70 mm. film which would increase possibility of coverage by 25 per cent and refer suspicious cases to the family physician. It also was agreed that county medical societies be advised to cooperate with the Division of Health in this work when possible rather than commercial x-raying.

The limited power of the Board of Medical Examiners in handling problems of unethical practice or even practicing without a license was presented by Dr. Goodrich. The problem of some unethical clinics practicing under the clinic name and not using a doctor's name was discussed.

Dr. Williams asked the Council if they wished a Central Registry on Tuberculosis established. It was decided that it would be of no aid in combatting tuberculosis.

J. W. Thompson, M.D., Chairman.

BOOK REVIEW

Battle of the Conscience, A Psychiatric Study of the Inner Workings of the Conscience. By Edmund Bergler, M.D. Washington Institute of Medicine, Washington, D. C. 1948. Price $3.75.

This book is a psychologic construction, an integrated development of the theme of conscience or the guilt complex. It is a more detailed and technical treatment but less popular and readagle than Meninger's "Man Against Himself." It should interest those in psychoanalytic work and those who like the intricacies of the finer psychological relationships. L. B. A.



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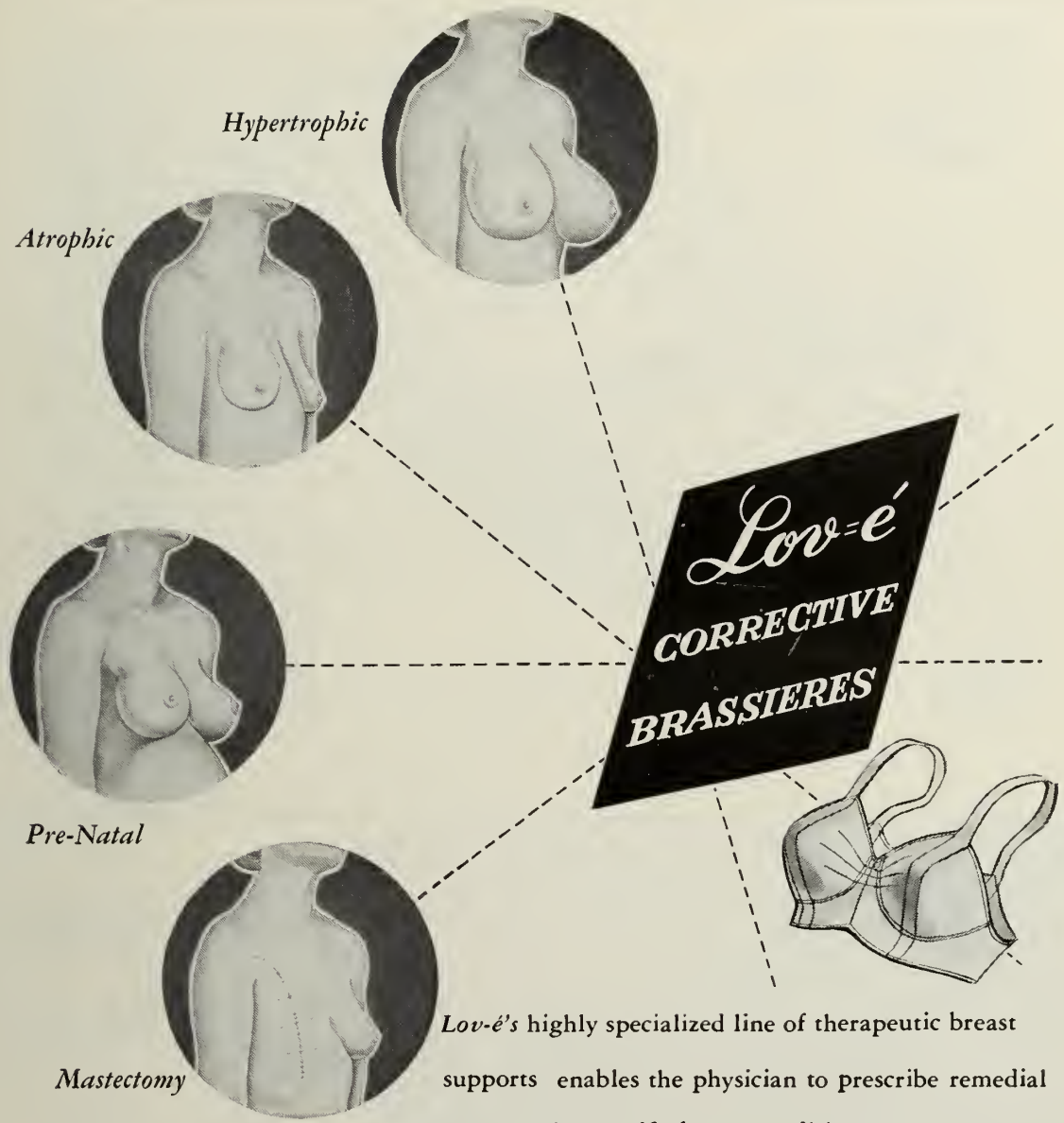
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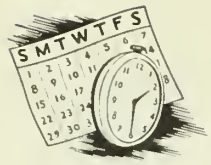
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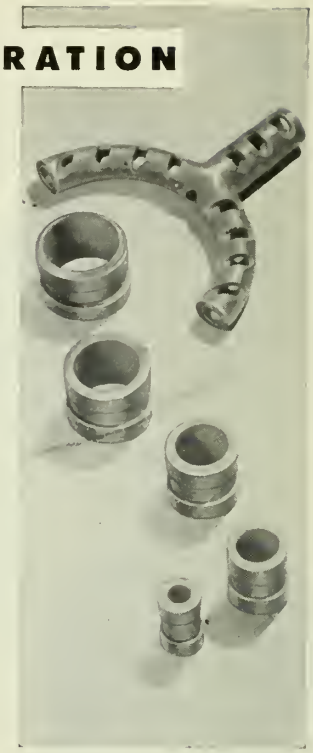
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**See Alesen, L. A.: "A Safety Factor in Gastric Resection." Surgery, XIX (1946), No. 2, pp. 220-222.*

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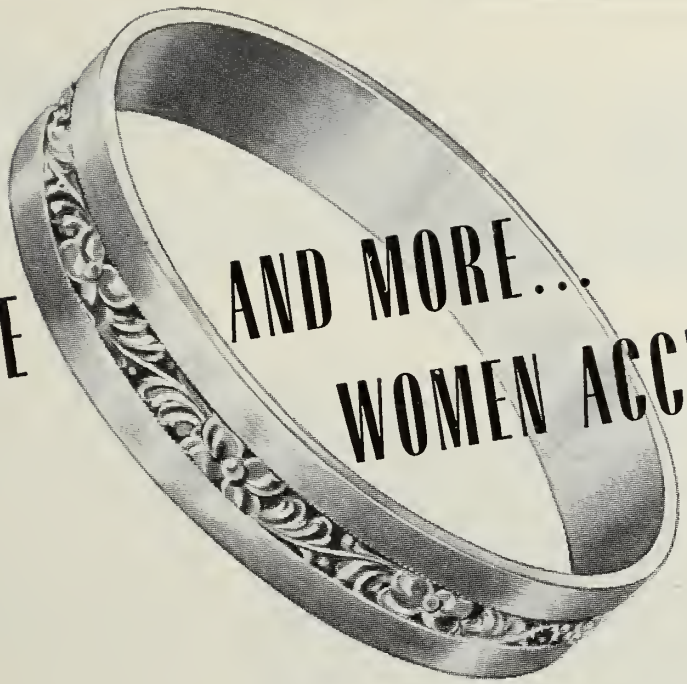
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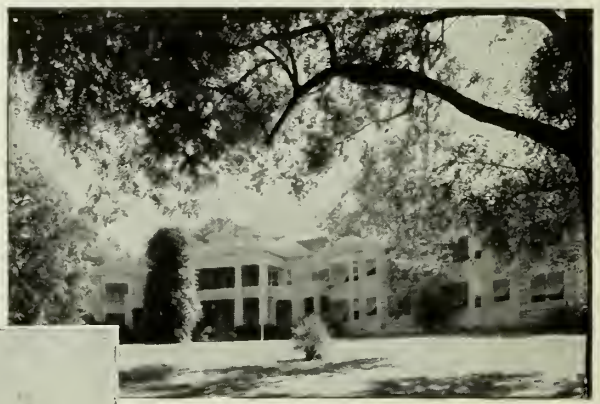
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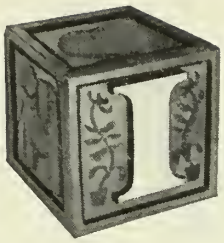
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2. Levine, S. Z.: J. A. M. A., 128:283, May 26, 1945.
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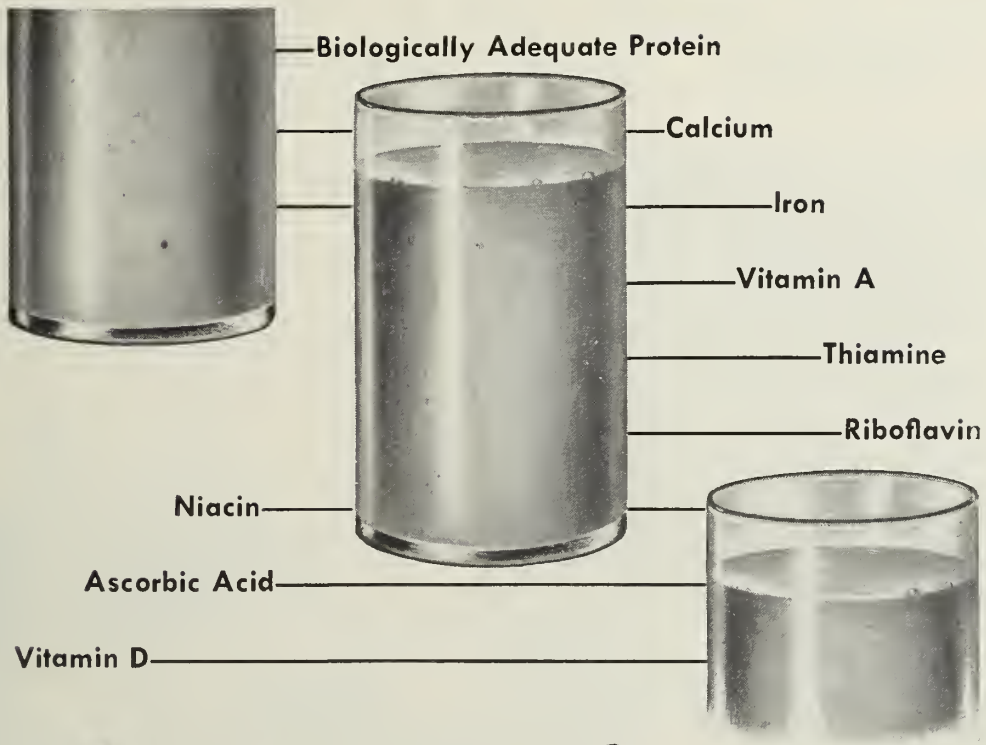
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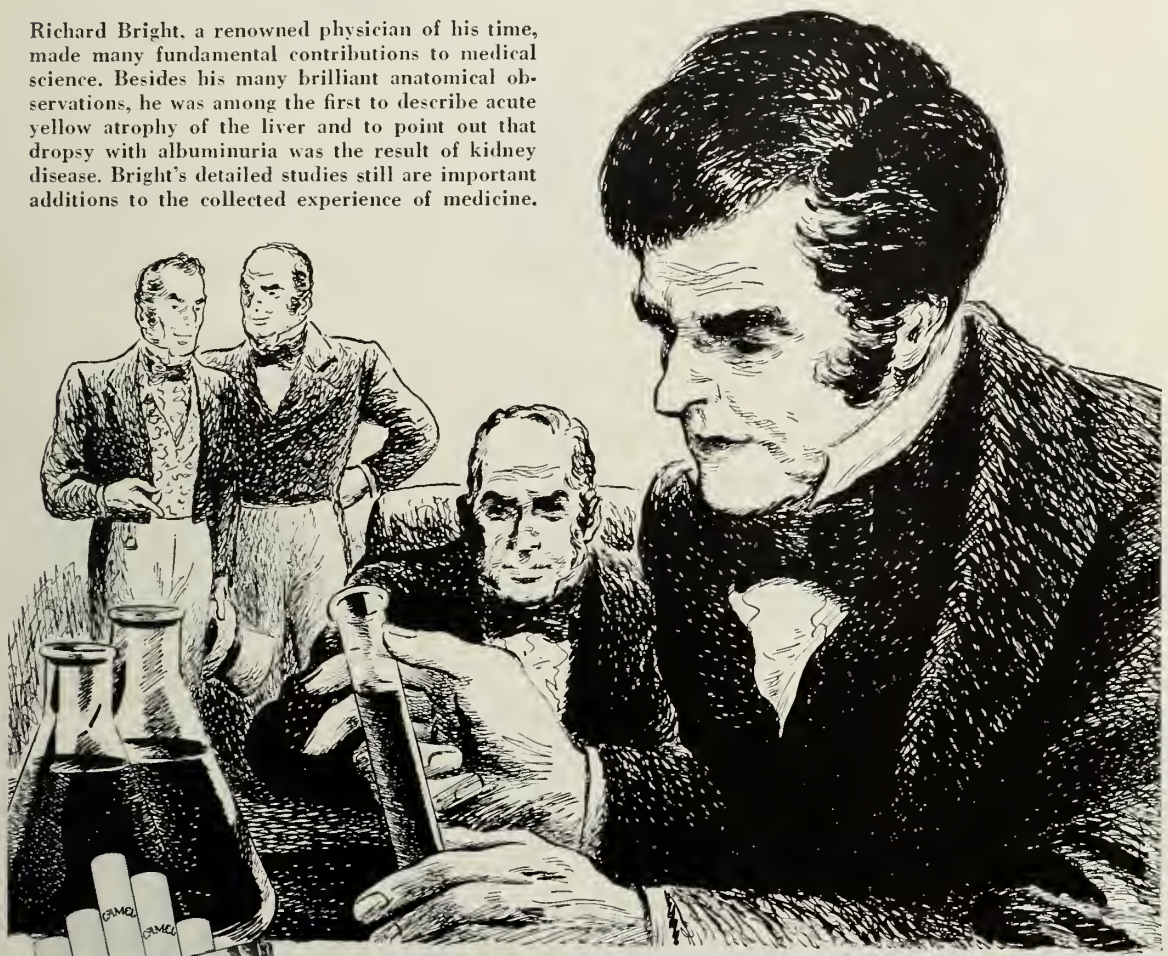
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Issued Monthly under direction of the Publication Committee

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VOLUME 45 | AUGUST, 1948 | NUMBER 8

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SPRAINS

GARRETT PIPKIN, M.D., *Kansas City, Mo.*

SCIENTIFICALLY, the subject of "sprains" is difficult to discuss, as such a diagnosis is no longer recognized. If one looks up sprains in the "Index Medicus," he finds the caption: "see individual joint, such as wrist, ankle," sub-title "wounds and injuries of." In other words, there is no such thing pathologically as a sprain and the scientists are insisting that diagnosis be made more accurate and want named specifically the involved anatomic structure, such as rupture of the deltoid ligament. However, lay people are not scientific, and will continue to use the terms "strain and sprain" regardless of what the "Index Medicus" says.

If the word sprain is not a scientific term, it is easy to follow that the treatments for sprains are not well standardized, nor scientific either. The lay mind is apt to diagnose an injury as a sprain and feel that a doctor is not needed in attendance. The majority of big time professional teams carry their own trainers, who handle this supposedly minor type of joint or muscle injury without reference to a doctor. It is interesting to note that most trainers treat this group of injuries with massage and active motion. Another great group of lay people feel that such an injury requires only time to heal and limp around, use crutches, or go to bed, as the severity of the injury seems to justify.

So, I will dispense with the "Index Medicus," and talk with and not down to the laity. What is a sprain? I had to go back to 1903 for a good definition. Quoting from Whitelock's book on "Sprains and Allied Injuries of Joints," a sprain is a "wrench or strain resulting in stretching or laceration of the soft parts without external wound."

Sprains may be divided into two large classes: (1) articular, or those affecting the joint themselves, and (2) muscular, concerned with overstretching, or dislocation of muscles and their tendons.

Articular sprains may be divided into: (a) simple sprains and (b) complicated sprains. In the simplest form of sprain, that is technically described as a strain, the soft parts merely are stretched beyond their capacity and there is supposedly no laceration. No swelling is to be found and the symptoms are only those of pain and stiffness with some loss of function. In the more severe forms of simple sprains, in which there has been more or less tearing of liagmentus structures, swelling occurs. Swelling immediately after an injury is due to hemorrhage. Arteries as well as veins are torn and pour their contents into surrounding tissues. Swelling that occurs hours, or even days later, is due to serious effusion. Delayed swelling in a joint injury in itself produces further symptoms and prolongs recovery. It is not necessary, and proper early treatment can circumvent it. For emphasis then, joint injuries occur in which swelling is immediate, is generally extensive, and due to hemorrhage. In others, pain and limited function are immediate and swelling is delayed for from twelve to twenty-four hours. It is in this period of grace that something can be done to alleviate the occurrence of secondary effusion and to shorten greatly the period of convalescence, if not actually reduce the likelihood of some degree of permanent disability. Of this I shall talk later.

First, some form of diagnostic procedure must be followed. It is not practical in my allotted time to cover more than the wrist, back, knee and ankle.

In regard to the wrist joint and hand, one sees few injuries which could be classified as a sprain. The common wrist sprain is really a fractured navicular. All are aware that roentgen ray of the navicular bone is technically difficult, and that the fracture line may be obscured in the initial roentgen rays. In fact, in a large Army series 40 per cent of fractured naviculars were missed on the initial roentgen

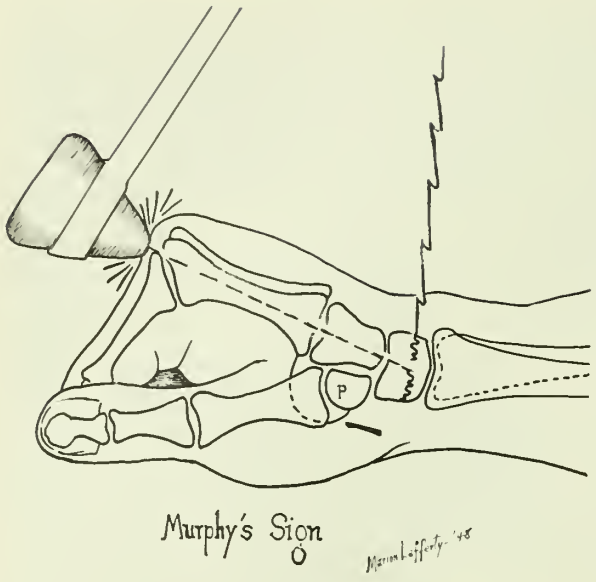


Fig. 1.

ray examination; so, it is important to remember in wrist injuries that are not responding to treatment, to roentgen ray them again in from seven to ten days, at which time it is more likely that the fracture line will be apparent. Clinically, it is not necessary to have a roentgen ray to diagnose a fractured navicular, as Murphy's sign will do it. Murphy's sign (fig. 1) consists of pounding on the knuckle of the index metacarpel bone with the wrist in neutral position. If a fractured navicular is present, pain will be more pronounced when pounding on the index ray. If a lunate dislocation is present, pain will be more pronounced on the middle ray. If Murphy's sign is present for a fractured navicular, and the roentgen ray report is negative, that wrist should be treated as for a fractured navicular; that is, casted for ten to fourteen days, and then again roentgen rayed. Similarly, sprained thumbs, particularly from fighting incidents, or changing tires, when the thumb slips and is caught with a driving force on the bent distal phalanx, are not sprains but fractures of the base of the first metacarpal. All of these hazards, of course, can be avoided by good roentgen ray, and yet roentgen ray work has its limitations also. A roentgen ray machine can not be blamed for failing to diagnose a fracture of the radial head which produces limited wrist motion when the lazy or overworked surgeon, or a careless technician, included only the wrist joint in the roentgen ray study. The roentgen ray machine in no way supplants careful clinical examination. It is a fairly safe rule that, if an examining surgeon will go over an injured extremity lightly digitally, asking the patient for the point of greatest tenderness, and having that point roentgen rayed, he will seldom be in error.

Most rapid swellings about the wrist are due to torn blood vessels, which, as a rule, occur on the dorsum. They are best treated by a splint and a compression bandage, preferably ACE elastic, elevation and cold, with continued active use of the fingers. It is a mistake to feel that these hematomas are collected in a fascial compartment and can be relieved by aspiration. The hemorrhage is generally a diffuse intercellular one. About once a year one sees an overly ambitious intern, who feels these dorsal wrist hematomas could have a clot evacuated by incision and drainage. Such ambitious youngsters choose the accident room for their supposed surgery, make an ill-advised incision, fail to find any large blood clot, encounter diffuse oozing and, before the days of penicillin, would end up with a serious tendon infection. So, learn by their sad experience; do not incise sprains in the hope of evacuating a large clot.

I will discuss the back briefly. The back situation is a complicated one, and, I suppose, like the Russian situation, always will be confused. Consider the case of the working man who develops a catch in his back. By the next morning he is in quite severe pain, and is pulled or bent over to one side. He has, so he says, sprained his back. What should he do?

I suggest that he consult a physician, and that the physician, instead of quickly prescribing adhesive tape, heat treatment, aspirin, codeine, or some other drug, should make a careful diagnosis.

In most instances, diagnosis will show the most common cause of such sprained backs is fatigue, which produces "muscle spasm," pulling the spine out of alignment. Anything to relax this muscle spasm makes the patient happy, including massage ("manipulative therapy"), heat, or injections of novocain or curare.

Such methods are superficial and represent symptomatic treatment only. Unless the underlying causes of fatigue are eliminated, recurrences are inevitable. The question in the doctor's mind, when examining a lame back, should be: "Why is this man tired?"

The knee joint belongs predominately to American football. In Spain they kill bulls for entertainment; in America they tear up knee joints. In the last season, one Kansas City high school team had seven of the eleven, who started the first game, out by the fourth game with football knees. One boy received a clipping injury and lay for two and one half hours behind the coach's bench with an internally bleeding knee before being taken home. High school age is the group that suffers the most. College teams are better coached, better conditioned and better trained so that the incidence of knee injuries is less. The initial knee injury, labelled a sprain, is actually some form of tear of the internal lateral ligament and is rarely at first a dislocated cartilage. If this sprained knee is casted three weeks, healing occurs, and the chance of a dislocated or torn cartilage developing later is remote. However, neither the coach, nor the boy, wishes to miss the next Saturday game. The boy is told

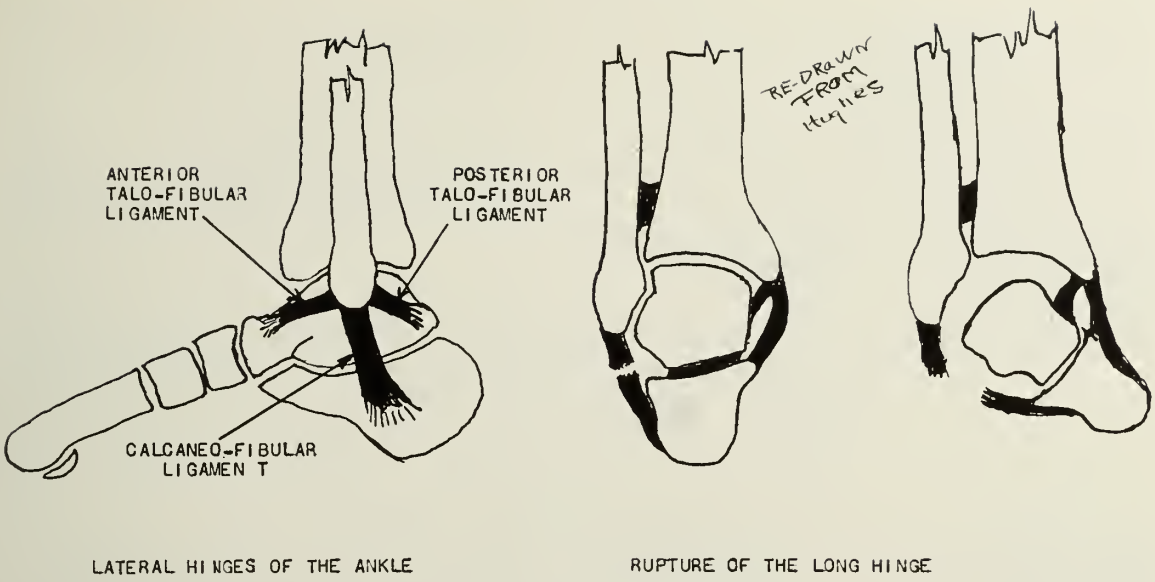


Fig. 2. Rupture of long hinge.

and believes that he has sprained his knee. He bakes it and has it taped up and plays the next week on a weak knee. A second injury occurs and this time, because of the intimate relation of the internal semilunar cartilage to the internal ligament, a cartilage tear results and the boy receives a serious knee injury. Summarizing: Initial knee injuries in football are generally torn internal lateral ligaments. Serious later injuries can be avoided by proper care.

At first glance, the present methods for treatment of ankle sprains would seem at variance with each other: The following treatments are practiced at the election of the physician: (1) elevation, ice packs and crutches; (2) taping, (3) massage, active motion and taping (athletic trainer); (4) novocain block and active weight bearing (Leriche), and (5) walking cast.

Elevation, ice packs, and crutches are discarded as being unsound economically. A patient can not afford to put up with them. Taping is one of the worst forms of treatment as most physicians tape an ankle that has been sprained just as they would if the individual were going to play football all afternoon. By this I mean an extensive, occlusive circular dressing is applied. The ankle swells in a few hours and the tape becomes an excruciating painful tourniquet. The smart patient will tear off the tape; the ever-trusting patient, aided with some codiene, may go on to a serious circulatory disturbance. Taping is not adequate to control secondary swelling.

The athletic trainer accomplishes his results by devoting more time to his patient than physicians are willing to give. James O. Reilly, M.D., of the Kansas City Athletic Club, advisory coach for several Olympic teams, tells me that the trainers will work all night with an ankle sprain, icing and massaging until pain is free, keeping the ankle moving, and then taping it. An ankle may be taped two or three times, the first night to keep ahead of any swelling. As a result, secondary swelling is combated successfully and the athlete is able to compete on the following Saturday.

The novocain injection method of Leriche is becoming increasingly popular and, at first glance, would seem to be diametrically opposed to the walking cast method. Probably the greatest value of the novocain injection method is in the matter of diagnosis, as it enables the surgeon to subdivide his cases into major and minor injuries and treat them accordingly.

There are three principal lateral ligaments of the ankle, two short and one long, (fig. 2), of which any combination of one or more may be torn.

Tears of the short hinges are the minor injuries and will do well on any form of treatment. Tears of the long hinge are the serious injuries and may give rise to permanent disability, later requiring surgical intervention. These tears should be casted. Tears of the long hinge can be demonstrated by

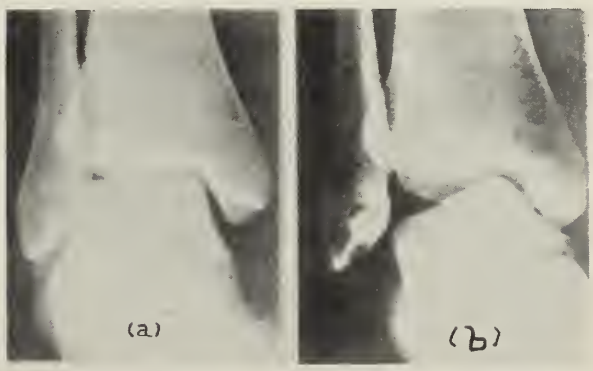


Fig. 3. Roentgen rays before and after novocain block.

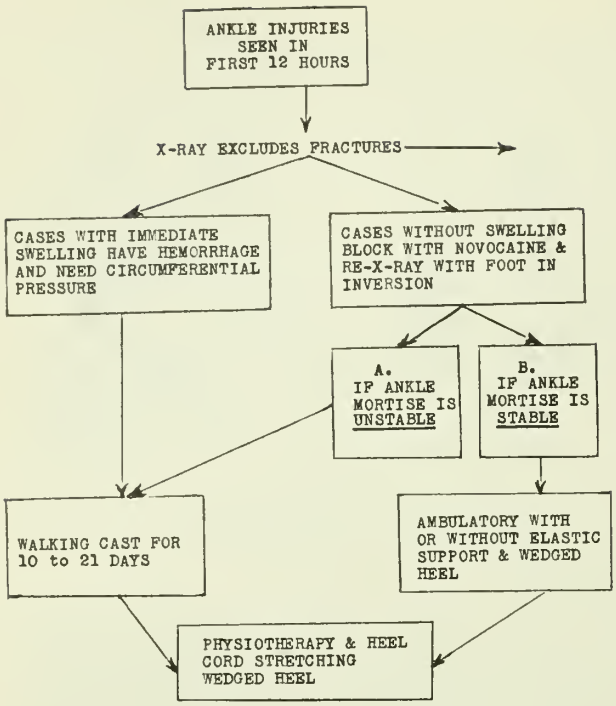


Fig. 4.

roentgenogram of the ankle with the foot in inversion, after blocking with novocain (fig. 3).

Applying this knowledge, I would suggest as an ideal procedure the following routine in the handling of ankle injuries (fig. 4).

Convalescent sprains should have the lateral border of the heel wedged 3/16 inch (fig. 5). Shoe repair men call this an outer "Dutchman." This not only gives the patient relief from discomfort but also a sense of security. Such a wedge should be worn at least three months to prevent recurrence. Finally, the patient should be instructed in heel cord stretching exercises for, after all, a short heel cord is why he sprained his ankle.

Summarizing ankle sprains: the successful treatments accomplish one common objective, that is, control of secondary swelling. The skilled trainer controls secondary swelling by technical, loving massage, gentle motion and accurate support. The walking cast controls swelling by circumferential pressure and active motion. Novocain injection therapy of Leriche eliminates pain so that active motion continues to regulate the circulatory mechanism of the extremity and stasis does not develop. All three methods are then compatible in skilled hands, and the choice of the method to use depends upon the skill and training of the operator.

In conclusion, sprains are unscientific. Sprains are here to stay. A sprained ankle is the most common athletic injury. In treating sprains, doctors are in competition with everyone, and, if they wish to continue to treat sprains, it behooves them to treat them better than anyone else. This any doctor should be able to do, as he has better tools if he will but use them.

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DISCUSSION

James R. Amos, M.D., Springfield: I did not come prepared to discuss this paper but it is such an important subject that I think it merits some discussion. In reference to fractures of the metacarpal and scaphoid, I think a large percentage of those will show fracture lines early if they are roentgen rayed properly and in the proper position. I certainly agree with Dr. Pipkin that if the signs and symptoms are sufficient to warrant a diagnosis of a severe sprain, even though the roentgen ray is negative, the part should be immobilized and within a week or ten days, if those symptoms persist, most likely a roentgen ray will show a fracture.

Many injuries about the knee joint are associated with a great deal of hemorrhage or hemoarthrosis. I think that hemorrhage should be aspirated and elastic support or immobilization applied early. I think one has recovery much sooner.

In reference to novocain injection in the ankle joint, I think this is a fine procedure for diagnosis but I do not believe it is a fine treatment. I think if the injury is severe enough to warrant injection of novocain to overcome pain, then the joint should be immobilized. I cannot see why one should inject a joint with novocain and then have the patient walk and keep on adding

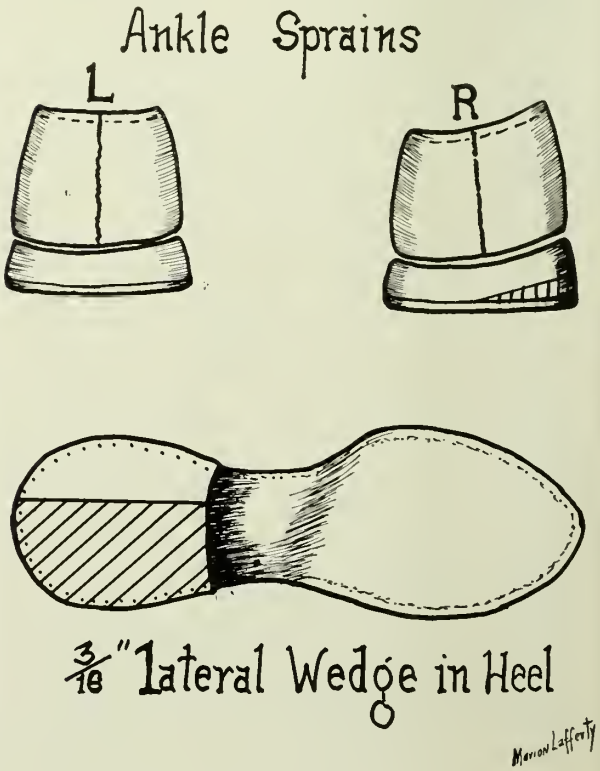


Fig. 5.

trauma to a preexisting trauma. I think as a whole ankle injuries are treated entirely too lightly. A Pott's fracture is considered a serious injury of the ankle joint, but it is really nothing more than an advanced strain with displacement.

DR. PIPKIN: The only point at variance seems to be on the use of novocain injections as a form of treatment for certain types of ankle sprain. I think the whole emphasis of this paper is: do not let ankle joints swell from soft tissue injury. These injuries that are injected with novocain are not in the ankle joint and they are not Pott's fractures but are minor tears of the anterior and posterior short hinges with a good long lateral hinge. They are in people that are not going to submit to a cast and would not wear one, although I am pretty good at selling people casts, and if one does not do something for the patient other than strap them with adhesive tape and give them hot and cold baths, they are going to have swelling. If one blocks them with novocain, they will not swell.

ELECTRIC CONVULSIVE THERAPY IN MENTAL DISORDERS ASSOCIATED WITH CHILDBEARING

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AND
DEWITT W. BROWN, *Indianapolis, Ind.*

IT IS NOW WELL established[1-7] that no special form of mental disorder characterizes the psychoses of pregnancy and the puerperium. Practically any psychiatric reaction pattern may occur, but the following gross distribution of diagnoses constitutes the bulk of these disorders[1]: manic-depressive psychosis, 40 per cent; schizophrenia, 20 per cent; delirium, 28.5 per cent; psychoneurosis, 6 per cent; psychosis with psychopathic personality, 5 per cent. The prognosis for recovery for the whole group of major psychoses is about 70 to 75 per cent which only indicates the traditional and established recover ability of manic-depressive and delirious disorders and the discouraging outcome of the majority of schizophrenic reactions.

In the past the treatment of puerperal psychoses has been largely symptomatic and was directed toward the improvement of maternal physical health. No specific treatment was available and often the course of the disorder was of many months duration and characterized by numerous difficulties in management because of the patient's excitement and uncooperativeness. A fairly long and expensive hospital residence was usually necessary, and an arduous medical and nursing program could be anticipated. The outlook for the toxic delirious reactions has been improved greatly in recent years by the introduction of antibiotics and pharmacologic methods of combatting infection. With continued improvement in obstetric management, this group of cases should be diminished in frequency and shortened in duration. Thus, the puerperal manic-depressive and schizophrenic patients remain as the greatest challenge to therapeutic abilities.

The advent of the shock therapies has been the most recent improvement in the treatment of the ordinary case of manic-depressive or schizophrenic psychosis. Metrazol shock has been almost abandoned because of its technical difficulties and the patient's intense dislike of its mode of action. Insulin shock therapy has proved to be expensive, time consuming and difficult to administer. The production of convulsive seizures by electricity has proved to be the method of choice inasmuch as it is therapeutically equal to metrazol and without its unpleasant effects, and it is immeasurably easier to administer than insulin shock therapy although possibly less effective in the treatment of schizophrenia. However, its ease of administration, lower mortality rate and infrequent serious physical complications have made it more widely accepted and utilized than other forms of shock treatment.

The contraindications to electric convulsive therapy, according to the older literature, were myriad. These included acute infections and febrile disorders, cardiovascular disease, osteoarthritis, curvature of the spine, thrombophlebitis, generalized arteriosclerosis, tuberculosis and pregnancy. Some of these barriers to electroshock treatment were heritages from the previous days of insulin and metrazol; some were due to therapeutic tragedies in the earlier experimental period; some represented the anxieties of psychiatrists who were dealing with a radical, violent and untried form of treatment. Because of these accepted contraindications a large number of deserving patients, including many with puerperal psychoses, were denied necessary and beneficial treatment. More recent reconsideration[8] has shown that many mentally ill patients with these supposed contraindications can be treated by electroshock. These successful therapeutic adventures emphasize the paramount importance of evaluating the patient as an unique individual, weighing his treatment needs against both his complicating disorders and the numerous dangers of withholding therapy.

The literature on electric convulsive therapy contains scattered references indicating that this treat-

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Presented before the Missouri Association for Neurology and Psychiatry, St. Louis, October 14, 1947.

ment has been employed occasionally in puerperal psychoses.[9-21] The therapeutic results have been sufficiently encouraging to warrant a reexamination of whether pregnancy or the puerperal state constitutes an unquestioned barrier to shock treatment. However, it is not possible to consider all major mental disorders associated with childbearing as a single group inasmuch as the psychoses of pregnancy present quite different problems of management from those of the postpartum period.

PUERPERAL PSYCHOSES

The majority of mental disorders associated with childbearing occur after delivery, and the largest percentage of this group is made up of manic-depressive and schizophrenic reactions. Toxic deliria occur in this period, but these are not now considered as suitable for shock therapy. However, it is easy to err in diagnosing a "toxic psychosis" when, in reality, the confused state is merely masking an underlying manic-depressive or schizophrenic disorder.[1]

Psychiatric experience with electric convulsive therapy in a large series of nonpuerperal major psychoses indicates that it is almost specific in those cases with a strong depressive trend, less effective but still of great value in manic patients and least beneficial in schizophrenia. This general prognostic expectancy seems equally valid for the puerperal psychoses according to reports in the literature (table 1) and personal experience. The postpartum status seems to add no special physical or psychologic hazards to recovery, and it appears that the duration of the psychosis is abbreviated and the recovery rate higher than in those puerperal psychoses treated only by traditional supportive methods. These improved results may be because so many postpartum psychoses have a strong depressive trend. The immediate removal of the depressive reactions permits early psychotherapeutic measures and resumption of wholesome activities in a more normal environment before the psychosis has time to crystallize into an irreversible malignant pattern.

The following case illustrates a typical puerperal depression with rapid recovery after electric convulsive therapy.

REPORT OF CASE

Case 1. A married woman, aged 23 years, was admitted to the Psychiatric Division on the twenty-first day after the delivery of her first child. Throughout pregnancy her health was excellent and no untoward mental symptoms were noted except some worry because her husband was soon to go overseas with his regiment. A spontaneous delivery occurred at term and there were no complications. On the fifth day postpartum she appeared to be confused and perplexed. This rapidly shifted to a deep depressive reaction with confusion. She refused food and took only small amounts of fluid and presented ever increasing problems of care.

On admission to the hospital she appeared to be toxic and dehydrated, but physical and laboratory studies revealed no definite findings. Her temperature was 100.5 F. She remained mute, refusing all food and fluids in a passively negativistic manner and it was necessary to institute tube feeding. Sodium amytal interview revealed a depressive affect and content of thought.

On the twenty-second and twenty-third days postpartum she was given electroshock treatments but failed to have a convulsive seizure. No favorable mental improvement was noted and it was necessary to continue tube feeding and continual nursing attention. On the twenty-fifth day she had her first convulsive reaction, and that evening she laughed and talked to the nurses after voluntarily eating a full diet. From that time she presented no problem in management. She occupied her time with small tasks and reading, was cheerful and cooperative and rapidly gained strength and weight. Six successful electric convulsive treatments were given and the patient was discharged in excellent physical and mental health. The duration of her hospital residence was fifteen days.

In this case the patient's febrile condition, poor state of nutrition and dehydration were not disregarded; and full recognition was accorded to the

Table 1. *Results of Shock Therapy in Postpartum Psychoses.*

Author	Number of Cases	Type of Postpartum Psychosis	Type of Shock Therapy	Results
Cruickshank[2]	4	Schizophrenia	2—Metrazol 2—Insulin	3 cases had complete remission
Kraines[10]	9	Manic-Depressive and Schizophrenia	Metrazol (?)	8 Recovered 1 "Social Recovery"
Blumberg and Billig[21]	1	Schizophrenia	Insulin	Recovery
Jacobs[7]	6	3 Postpartum Depression 3 Schizophrenia	Electroshock	3 Depressions Recovered 3 Schizophrenics—No Benefit
Ross[13]	7	Manic-Depressive	Electroshock	All cases improved 2 Recovered 1 "Social Recovery"
Feldman et al[18]	18	Schizophrenia and Depressions	10—Electroshock 4—Electroshock-Insulin 1—Metrazol 3—Insulin	10 of 15 schizophrenics improved 8 recovered or much improved 1 died
Kino and Thorpe[21]	?	Depression	Electroshock	93% recovery
	?	Mania		Almost as good recovery rate 1 died

obstacles to shock therapy. However, it appeared that postponement of treatment would permit further physical deterioration and might seriously endanger the patient's chance for recovery from her mental illness. Experience has shown that electric convulsive therapy is frequently the best method of establishing metabolic and nutritional balance in an otherwise uncontrollable mental disorder and Kalinowsky[23] has stated that shock therapy is the best way of increasing the weight of a psychotic patient. Some therapists [7,18] maintain that it is necessary to withhold convulsive treatment for the first month after delivery. Jacobs[7] has suggested that such therapy might have some unfortunate influence on the uterus and Feldman et al[18] believe that this lapse of time is essential to permit restitution of the pelvic blood vessels and to prevent embolism. The latter base their opinion on a fatality which they assume is due to embolism but no autopsy was performed and there is no evidence presented that the early postpartum condition *per se,* rather than the intrinsic dangers of shock therapy, was responsible for the fatal outcome. Kino and Thorpe[21] report a fatality due to pulmonary infarction, the onset of the fatal syndrome occurring six days after the last convulsion. They suggest that electric convulsive therapy may have mobilized a thrombus in the pelvic veins but also state that the patient had been actively maniacal throughout the period following the last treatment. On the other hand, Kraines[10] believed that the psychosis should be treated by convulsive shock therapy as quickly as possible after the delivery and found that favorable results were often amazingly rapid, sometimes requiring only two or three treatments.

In our cases of postpuerperal psychosis the patients were treated with electroshock as soon as routine psychiatric and physical examinations were completed; and therapy was instituted on the twenty-second, twenty-fourth and fourteenth days postpartum, respectively. The contraindications were waived whenever it appeared that the physical and mental treatment needs of the patient were of such magnitude as to necessitate electric convulsive therapy as a life saving and personality saving measure. In postpartum psychoses the psychiatric indications for shock treatment are the supreme and deciding factors as to whether and when it is to be used. The physical contraindications are of secondary importance, within limits of common sense, and should not deter the institution of indicated shock therapy. Procrastination and postponement of treatment until the patient is considered to be in good physical condition may eventuate in prolonged or permanent mental invalidism or even a fatal outcome. It is possible to undertake electric convulsive therapy even in the face of serious physical hazards, as shown in the following case.

REPORT OF CASE

Case 2. A white married woman, aged 25 years, was admitted to the Psychiatric Division on the twenty-third day after the delivery of her first child. She had had two previous episodes of manic-depressive psychosis, the first following a broken love affair and the second following a long period of strain and overwork. During pregnancy her health had been excellent and only a moderate degree of moodiness and emotional tension had been noted. The labor required twenty-six hours and was terminated by the application of low forceps. As the membranes were twisted out, the uterus inverted completely and tremendous hemorrhage occurred. A midline abdominal incision was made and the uterine inversion was corrected by pushing upward through the vagina and pulling through the abdominal incision. The patient was in profound shock and blood and plasma infusions were given. The postoperative course was stormy and pneumonia developed on the fourth day. By the tenth day her physical condition had improved but she became restless, excited and talked incoherently. These premonitory manifestations soon were replaced by an uncontrollable manic reaction with disorientation, extremely rapid flight of ideas and constant motor activity. Massive doses of sedatives failed to control the increasing excitement or to procure more than two hours sleep.

When admitted to the Psychiatric Division on the twenty-third day postpartum, her condition was critical. In spite of near exhaustion and collapse, she continued to talk, sing and scream continually and rolled about in bed constantly. She expectorated food and fluids placed in her mouth and successfully vomited most of the feedings given by stomach tube. Unless watched constantly, she voided in bed and rolled in the wet sheets until the skin of the back was macerated. Seven and one half grains of sodium amytal given intravenously produced only two hours rest.

A complete physical examination was impossible, but no definite pathologic condition could be found. Dehydration was marked, and she was markedly toxic in appearance. Electrocardiographic examination and roentgenograms of the lungs revealed no abnormality. Gynecologic examination revealed no pelvic abnormality. There was a freshly healed surgical scar extending from the umbilicus to the pubis. The urine was loaded with white blood cells, and the rectal temperature was 103.5 F.; this was believed to be due to pyelitis. Penicillin and sulfadiazine therapy was instituted to combat the latter condition.

It was obvious that ordinary measures were impotent to control the wild excitement and that the patient's life was seriously endangered. Insulin shock therapy seemed unwise because her local physician had attempted to sedate her with sub-shock insulin and shock and coma occurred after the administration of 30 units; she was revived from this coma with difficulty. Therefore, electric convulsive therapy appeared to be the only available life saving measure. Accordingly, the skin of the abdomen was prepared as for surgical operation, sterile surgical dressings were applied over the midline scar and the whole abdominal wall was taped tightly with wide strips of adhesive straps. She was then given 2.25 cubic centimeters of curare (Intocostrin) intravenously and electroshock therapy administered on the twenty-fourth day postpartum. A convulsive reaction occurred without any untoward event, and that night she appeared more composed and occasionally made a rational statement. On the twenty-fifth and twenty-sixth days she was treated successfully in spite of a rectal temperature varying between 102 and 103 F. Following the

third treatment she was accepting solid food, taking all fluids offered, requesting the bedpan and apologizing for her noisy behavior. Although far from mentally well, she could cooperate in her care and her physical condition showed rapid improvement.

Seven electric convulsive treatments were given before the thirty-fifth day postpartum. At that time she was in excellent physical condition, had gained weight, was afebrile and the urine examination was completely normal. The abdominal wall was firm and no incisional hernia was found. She was completely rational and composed and no psychic residuals were noted except egotistic boastfulness and occasional bouts of irritable resentment. She was discharged on the seventeenth day of hospital residence, apparently in excellent condition.

The patient had two subsequent relapses, indicating that her excitement had been only temporarily controlled. She was returned to the hospital on both occasions for further electroshock and eventually recovered and remained well after a total of twenty-six electric convulsive treatments.

PSYCHOSES DURING GESTATION

Manic-depressive and schizophrenic psychoses during gestation are especially dangerous to the lives of both the mother and unborn child. Those characterized by excitement and overactivity soon lead to exhaustion, intercurrent infection and mechanical injury. Even those disorders of less disturbed and spectacular symptomatology present serious hazards to the pregnancy because of dehydration and nutritional metabolic complications. Often the traditional management of sedation and general medical and nursing care are impotent to halt the onset of serious physical complications in the mother and interruption of the pregnancy. In addition, postponement of therapy for several months until termination of the pregnancy may permit the formation of an irreversible psychotic pattern with lifelong mental invalidism. These general medical and psychiatric factors justify serious consideration of some type of shock therapy during the gestational period.

Insulin shock therapy during pregnancy has not had a wide clinical trial, but theoretic considerations would suggest that such therapy would be highly hazardous. Diabetic women on insulin dosage have experienced difficulties in the gestational period and frequent stillbirths occur. It is probable that the fetal tissues are not well adapted to withstanding the effects of prolonged major changes in sugar metabolism, especially hypoglycemia, and it is likely that serious interference with the developmental pattern, maturation and viability may occur. Two instances of insulin shock therapy have been reported[22] in pregnant women, and both resulted in the delivery of dead and macerated children. These considerations militate against the use of insulin shock therapy during gestation.

The occurrence of convulsions during gestation, as observed in pregnant epileptic women, seems to carry no special hazards to either mother or child aside from the danger of mechanical injury. This has led to the occasional employment of electroshock therapy until enough cases have accumulated to indicate that it has been used successfully in nearly every month of gestation (table 2). No serious results have been observed in the mothers and the psychiatric results parallel those anticipated in ordinary uncomplicated cases. There are no reported instances in which electroshock therapy caused termination of the pregnancy, and two authors[17,15] state that the uterus did not contract nor was it affected in any degree by the treatment.

The health and maturation of the fetus do not appear to be influenced adversely by electroshock therapy, and no abnormalities in the delivered children have been recorded. In one case[15] it was noted that during the treatment the fetal heart sounds were modified and muffled and after one moment an

Table 2. *Results of Shock Therapy During Pregnancy.*

Author	Duration of Pregnancy	Type of Psychosis	Type of Shock Therapy	Number of Treatments	Results in Mother	Results in Child
Moore[8]	3 Months	——	Electroshock	——	Recovered	Normal
Polatin and Hoch[17]	3½ Months	Depression	Electroshock	6	Recovered	Normal
Goldstein et al.[9]	3½ Months	Schizophrenia	Metrazol Insulin	13 13 Treat. below 50u.	Unimproved	Normal
Pacella[14]	4-5 Months 4-5 Months	——	Electroshock	——	Recovered	1 Normal 1 Followed to 7th Month
Thorpe[12]	5½ Months	Agitated Depression	Electroshock	13	Recovered	Normal
Polatin and Hoch[17]	7 Months	Conversion Hysteria	Electroshock	10	Unimproved	Normal
M. Ravina[15]	7½ Months	——	Electroshock	3	"Without Complications"	
Leroux et al.[15]	8½ Months	Agitated Depression	Electroshock	3	Recovered	Normal
Gralnick[22]	1 Month	Schizophrenia	Electroshock Insulin	24 18 with 8 Deep Comas	Repeated Relapse	Born Dead
	2-3 Months	Schizophrenia?	Insulin	24 with 14 Deep Comas	Marked Improvement	Born Dead

irregular rhythm developed; but these manifestations disappeared a moment later. This was observed in two subsequent treatments, but the delivery was uncomplicated and the baby was apparently normal.

REPORT OF CASE

Case 3. A Negro woman, aged 17 years, was admitted to the hospital on September 9, 1947, because of slowly progressive mental disturbance, malnutrition and increasing physical failure. She had been pregnant for approximately four and one half months and had been physically and mentally ill ever since she learned of this pregnancy.

The patient had never been an adequate or intelligent person. She married at 15 years and the first pregnancy was uneventful. The present pregnancy, occurring seventeen months later, was not desired; and the patient became emotionally upset when she suspected that she was pregnant. She made repeated visits to the hospital with a host of somatic complaints and hopefully anticipated a miscarriage. When this was not forthcoming, she became less active, vague and dreamy in thought and neglected herself. Finally, she began to hear voices warning her of impending disaster and the imminent death of the fetus. Her physical condition declined rapidly.

Physical and laboratotry studies revealed a moderate anemia, poor hydration and nutrition and a general appearance suggesting toxicity although no specific toxic condition could be found. Obstetric examination revealed normal pregnancy of approximately four and one half months duration.

The psychiatric picture was one of schizophrenia with hebephrenic and catatonic features. She spent most of the time lying quietly in bed, completely indifferent to her environment. Occasionally she complained of threatening hallucinations.

Electroshock therapy was instituted after administration of 1.5 cubic centimeters of curare (Intocostrin) and was uneventful except for slight contraction of the abdominal muscles. After the second treatment the patient was found in bed with the vulva and sheets covered with blood. No information could be elicited from the patient, but obstetric examination revealed the mucus plug to be in place in the cervix, and no vaginal source of bleeding could be discovered. In view of the desperate condition of the patient, it was determined that electro-convulsive therapy should be continued. No bleeding was noted after the third treatment and the patient roused sufficiently from her semistupor to reassure the physicians that she had bled during the fourth month of the previous pregnancy without known cause or complications.

The patient was given twenty-six electro-convulsive treatments with curarization and made marked improvement. She became active about the ward, cooperative and helpful. Her physical condition was excellent at the time of discharge. She evinced considerable interest in returning home and in her expected delivery, but there appeared to be some emotional dulling. Obsteric examination revealed normal progress of her pregnancy. Although the electric-convulsive therapy failed to produce complete recovery, it was responsible for improving the patient's general health and in carrying her almost to term in excellent physical condition.

The following case demonstrates the value of electroshock therapy in advanced pregnancy in which the uncontrollable excitement threatened the lives of both mother and child.

REPORT OF CASE

Case 4. A white married woman, aged 20 years, primipara, was admitted to the Psychiatric Division on March 28, 1947. She had previously been hospitalized on two occasions for a manic-depressive psychosis. Her health during gestation was satisfactory except for cyclic variations of mood. At approximately the seventh month of pregnancy she became wildly overactive, talked continually in an incoherent manner and wandered constantly about the house without clothing. This state of extreme activity continued for ten days and nights, requiring the concerted efforts of the whole family to restrain her. On admission she was highly disturbed and showed pressure of speech and activity. She was unable to sleep more than a few minutes in a twenty-four hour period. The psychiatric picture was one of typical acute manic excitement.

Complete physical examination was impossible, but nothing remarkable was noted except some malnutrition. The blood pressure was 135/85. Laboratory examinations, including hemocytologic studies, urine examination, blood serologic tests for syphilis and spinal fluid studies, were all negative for any pathologic condition. Obstetric examination revealed pregnancy of approximately seven lunar months.

During the next ten days every effort to control the patient's excitement was unsuccessful. Her activity and excitement were so extreme that it was apparent that exhaustion was impending. Often she volitionally permitted her bladder to distend and at other times she voided in bed, threshing about in the soaked sheets until the skin of the back was macerated. She would not eat and refused fluid because it was not "holy water." When tube feeding was employed, she managed to vomit most of the feeding. In spite of heavy sedation she was unable to sleep and sang and threshed in bed most of the night. On the tenth day her temperature rose to 101 F. and it was obvious that she was failing physically.

The obstetric consultant, Dr. David L. Smith, evaluated the situation as follows: "Examination of this patient reveals a seven months pregnancy in a violently manic patient who must be tube-fed and restrained to prevent self injury. In my opinion the pregnancy is only incidental, and its termination is therefore not indicated; and, in fact, it would be highly dangerous under these circumstances. The pregnancy should be disregarded and the patient treated as seems necessary to control or improve the psychosis. In view of the danger of death from aspiration pneumonia which now exists in the patient, I believe that electric shock therapy should not be ruled out merely because the patient is pregnant." It was his opinion that this was a crucial period in regard to viability of the fetus; and he felt that even one or two weeks more of intrauterine life at this time was of paramount importance in determining the viability of this child. The opinion was also expressed that in her present state the patient was practically uncontrollable for any surgical or obstetric procedures.

On April 7, 1947, routine electroshock therapy without curare administration was instituted. A convulsive seizure of the grand mal type was procured without difficulty and without unusual somatic changes. However, the uterus went into tonic contraction which per-

sisted for about ten minutes and then gradually relaxed. The next day the second electro-convulsive treatment was given without unusual somatic changes. An obstetrician was in attendance, and he noted that before treatment the fetal heart rate was 140 per minute, regular and of good quality. During the patient's tonic convulsion the fetal heart rate became more rapid; and this increased rate persisted throughout the patient's clonic convulsive phase. Upon termination of the convulsion the fetal heart rate became slower and at times irregular, finally becoming 72 per minute and not synchronous with the mother's pulse. The heart tones became inaudible for a period of three to five minutes toward the end of this phase and then came back gradually and established a regular rate of 160 per minute about fifteen minutes after the convulsive seizure. Twelve minutes after the convulsive seizure the patient was showing mild vaginal bleeding. For at least fifteen minutes afterward there was a sustained uterine contraction. During the next twenty-four hours the patient passed a few blood clots per vagina.

On April 10, four days following the first electro-convulsive treatment, the patient had shown almost unbelievable improvement. She was quiet and composed and ate eagerly. She was transferred to the convalescent ward, went about talking in a friendly and rational manner and occupied herself by making clothing for her baby. She was extremely grateful that the treatments had brought about such an amelioration of the excitement which she was unable to control.

On the night of April 12 the patient went into labor which possibly was hastened by an ill-advised enema; but she showed no untoward nor uncontrollable psychiatric manifestations. The obstetrician avoided sedation because of the possibility of causing sufficient mental confusion to bring about exacerbation of her underlying psychosis. The patient was cooperative during delivery and was controlled without difficulty. After a labor of twenty-four hours, she delivered a living male child weighing 5¼ lbs. Except for prematurity nothing unusual was noted about the child and it has continued to do well under the usual management of the premature baby.

Throughout the first ten days of her postpartum course the patient was lucid, cooperative and showed no evidence of any unusual mental condition except for some euphoria. On the tenth day, however, her excitement recurred in full force and she again became unmanageable; but by that time her physical and obstetric condition were such that it was possible to institute electro-convulsive therapy without apprehension. She was then given fourteen more electroshock treatments and made an uneventful recovery from her acute manic episode. She was discharged from the hospital on July 7, 1947, in good physical and mental condition and has continued to maintain this state until the present time.

The observations in this case differ from those reported by others[15,17] in that the uterus was definitely affected during the convulsion. The uterine musculature went into tonic and sustained contraction of such degree that vaginal bleeding occurred. While this caused no difficulty in this case, it is quite possible that further treatments might have induced labor. It is also noteworthy that changes occurred in the fetal circulation; these were quite similar to those reported by Leroux et al. These observations indicate that there is yet much to be learned concerning the physiology of electroshock in advanced pregnancy, but all reports would indicate that it is a comparatively safe procedure. Two authors[15,16,20] have employed the treatment successfully two weeks before term. In this case it is obvious that a fatal outcome for mother and child would have eventuated without its use.

CONCLUSION

Electro-convulsive therapy has had sufficient clinical trial to establish its value and comparative safety in mental disorders associated with childbearing. Its utilization should be considered seriously in all cases of manic-depressive and schizophrenic disorders of the gestational and puerperal periods. The decision of whether or not it is to be instituted should be based on the total treatment needs of the patient, and the greater emphasis should be placed on the psychiatric indications rather than on the physical condition or the puerperal status.

The early utilization of electroshock treatment in puerperal manic-depressive and schizophrenic psychoses will shorten the duration of illness, reduce the medical and nursing problems and produce a better rate of recovery than any of the previous forms of treatment. In gestational psychoses it often makes it possible to carry the pregnancy to term and simultaneously improve the physical condition of the mother. The course of therapy should be instituted as soon as the diagnosis can be established inasmuch as the dangers of chronic mental invalidism are fully as great as the physical hazards.

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SEQUELAE OF MILITARY SERVICE AND THEIR TREATMENT IN A VETERANS ADMINISTRATION MENTAL HYGIENE CLINIC

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A MAJOR PREMISE of the times is the constant urge to better oneself, the search for satisfactions and the, so often elusive, pursuit of happiness. These needs come in conflict with modern trends of living; namely, (1) the prolonged period of dependency, which often reaches beyond adolescence and into adulthood, and (2) an adult existence often devoid of a sense of accomplishment, of a purpose or attainable goals.

During this prolonged dependency period an exaggerated tendency toward wishful thinking, feelings of being strong, powerful or exalted, often sets on. It is as if an inherent urge to conquer, dominate, achieve, without having to struggle, has been given free rein during this twilight period before the sense of reality has been felt.

It is in this period of self-deception and superficial satisfaction of one's feelings of importance—into this realm of dependent, immature concepts of the meaning and value of struggle—that the results of military service have made their largest imprint. Either the period of dependency has been prolonged or, because of the ease of goal achievements and pseudomaturity during military service, the actual awakening to a world in which one is basically solitary and isolated has been postponed. The rudeness of this awakening, the extent of ego-regression incurred during the war years, determine the extent and acuteness of the symptoms manifested during the readjustment period.

Aware of the emotional upheaval, the basic insecurity and the strivings for identification that beset the uprooted and socially unabsorbed individual, the psychiatrist in the mental hygiene clinic attempts, by utilizing the clinic's resources, a thorough evaluation of the individual problem and brings to its solution the help of the Veterans Administration as well as community resources. The problem faced is not a thorough uncovering and resynthesis of all the emotional conflicts within the individual. It is just as important to assist large numbers of veterans in breaching the gap toward normal civilian existence, to reassess what are the most vulnerable weak points in the patient's defenses and remedy them as far as possible, while assisting the veteran to have a perspective and resume a secure evaluation of his needs and wants.

The world is far from perfect—although all crave perfection; one's setting is often insecure—although one demands security and certainty; surroundings frequently are hostile—although one needs and requires love. The veteran has to be taught those realities. He has to be helped to accept them. This realization is uppermost and supersedes any deeper grasp of the given psychodynamic interpretation. The question is "what does this man need and how can he most readily grasp it?" rather than "what do his symptoms stand for and how deep should one proceed in unraveling them?" The stress is on reeducating the veteran, within a secure, permissive setting, to accept the exigencies of reality. Psychotherapy is a means toward helping create a design for living, helping awaken ego strengths in face of a culture pattern that ridicules, ignores, rarely sympathizes with the man in the throes of self doubts and innate insecurities.

The veteran, upon his return home, found himself out of touch with the cultural demands, with the rigid, uncompromising upbringing. The prevalent "don'ts," the urge toward keeping up appearances, the striving for self-expression were difficult and contradictory to grasp. He was often in need of support to withstand a too critical demand or expectation from his family. The insecurity of his daily occupation contrasted with the relative security of the period in military service. The impotence, in face of obstacles seemingly insurmountable, revived the implacable frustration of the years in military service as well as the conflicts once considered resolved.

However, as the veteran has the opportunity both to understand and to look at himself as he really is and not as the prevailing code urges him to think he should be, a means of becoming desensitized and gradually acclimatized to the rougher

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Published with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author.
Presented before the Missouri Association for Neurology and Psychiatry, St. Louis, October 14, 1947.
This article will appear unabridged in the Psychiatric Quarterly.

uncertainties of daily existence becomes operative. It is often a problem of actually understanding or accepting one's own shortcomings without feeling either blamed nor frustrated through this admission.

The psychotherapeutic session gives the veteran this opportunity. He is allowed to produce his most hidden scruples, to enlarge upon his shortcomings and to evaluate his aspirations. Often the frequent repetition of his complaints, with some prodding into free association and faltering attempts to integrate his thinking into a comprehensible whole, suffices to give him a new orientation. The ability to relate to and establish a close link with the therapist equips him with a much stronger armor to confront his obstacles in life. He has shed his fear, his doubts have become meaningful and his search for security has been temporized, while finding an ally for the journey through this exploit of the unknown. A reeducative, intellectual approach merely suffices to minimize the acuteness of the psychoneurotic symptoms. The uncovering of deep seated conflicts, though important, is difficult in the majority of cases. Just as too passive an approach by the therapist results in an endless repetitious recital of complaints, so does an active, directive approach often irritate and further confuse the already insecure patient. Nor does mere opportunity at catharsis, the giving vent to repressed hostility during the treatment session, give more than surcease, never much real understanding of the cause.

The pattern of treatment finally was resolved in a compromise. The rapport with the therapist as well as an intimate understanding of the patient was obtained during the first few interviews. The extent of insight, ability to verbalize his thoughts and his need for group identification were then considered in determining his need for further socialization by means of exposure to group therapy. Only the intellectually alert, none too fixed nor too labile, were considered good candidates for the group session. At the earliest evidence of withdrawal from or irritability within the group situation the veteran was returned to his individual therapist.

CASE HISTORIES OF TYPICAL GROUP THERAPY MEMBER

Case A. C. C.: "Afraid of everything—can't concentrate—feel panicky." A 25 year old white male, married, second of three siblings, only son, high school graduate was always overprotected, was sensitive and had but few friends. He wished to become a flyer but dropped out of cadet training because of fear of flying. Since then he has been depressed, irritable, insecure. He reenlisted in 1945 for a year and finally was discharged on points. He felt acute anxiety shortly after his mother's death.

Diagnosis.—Anxiety state, moderately severe.

Course.—Patient was seen four times within ten days for individual psychotherapeutic sessions. He talked freely about the disappointment of failing as a pilot, expressed his need for security. He gave his reason for finally quitting the service as due to his fear of being sent overseas. His need for being loved and protected and the significance of his indifferent feeling toward his child were discussed. The role of his symptoms as a means to shun the unpleasantness of his job and the mature obligations of his existence were taken up. At the end of this period he began to look for activities, such as going to the Y. M. C. A. He resumed his work and began to report to weekly group therapy sessions.

He has come regularly to these sessions for the last three months. There have been no residuals of the acute anxiety beyond occasional worry concerning his heart. He still has occasional friction with his mother-in-law. He freely verbalizes his degree of improvement, exhorts others to enlarge their interest and he looks forward to the group meetings which provide him with support as well as an opportunity to share with others his increased understanding of himself.

Case B. C. C.: "Difficulty in remembering, startle reaction at loud noises, feeling of uncertainty and unreality." A 35 year old white male, single, second oldest of five siblings, raised by stern, rigid parent, had left home and had many marginal jobs and a long amnesic period during depression years, considerable nomadism. He was in the Army from May 1943 to April 1946. He reenlisted toward the end of 1946, contracted gonorrhea and those symptoms led to hospitalization. He had obsessive ideas about planting trees, sexual inadequacy, considerable inferiority feelings about encounters with prostitutes.

Course.—He took an active part in group discussions, usually lecturing in a pedantic manner to others or elaborating on some dreams or other materials brought out. He believes he has gained more confidence from the group participation. His basic schizoid make-up is not changed but he keeps up at school and is more ingratiating and tries harder to keep friends.

Case C. C. C.: "Tightness in throat, unable to breath, dizziness, afraid he'd die." A 23 year old, white male, attained tenth grade school, second of four siblings, raised in a home full of dissension. He frequently stayed away from home, working as a caddy. While aboard ship in action or when in typhoon, he would become tense, weak and afraid he would die. Since discharge in December 1945, he had had daily palpitations, profuse sweating, tightness, usually in the evening. After initial four individual interviews the patient joined group sessions. He verbalized freely his panic states, described tense situations aboard ship when he felt the same way and discussed home factors, lack of feelings or love for mother and insecurity in sizing up his future at school. He gradually verbalized various traumatic experiences in childhood, such as being punished for wrongs he has not done. He took an active part in trying to analyze other people's symptoms and in contrasting them to the period when he had similar ones. He frequently repeats, within the group, the need for acting as a grown up and not depending too much on others.

He asked himself, after attending the group for about twelve sessions, if he should not stop, as he did not want to become too dependent on it. The benefits derived were to his mind: "being flattered by the group and therapist, developing confidence and losing the sense of isolation." He has been making a good school adjustment, made successful heterosexual contacts and was symptom free at the end of treatment.

DISCUSSION

The histories cited represented typical cases accepted for group therapy. They can be summarized as follows:

1. The immature, over-dependent person who had exaggerated ideals of wish fulfillment and achievements in the military service which did not materialize. The over compensation for this basic failure in terms of self-assurance and a feeling of competence while in uniform is sorely tried and comes in conflict with the realities of family ties and economic existence.

2. The rigid, compulsive, perfectionist person who incurred a serious degree of loss of confidence within the implacable military situation and who can not reorient himself to civilian existence because of this feeling of failure or guilt over his setbacks.

The ability to mingle the aggressive, active person with those basically passive and submissive was of value in maintaining an enthusiastic, keen participation. The shy, inarticulate person was helped to tackle the situation he otherwise would not have mastered.

The therapist usually opened the session with a statement urging the group to bring forth their problems and take an active part. The group seldom had more than eight to ten members and the weekly meetings lasted from one to two hours. Gradually a cohesiveness, a spontaneity of common interest and causes developed. The veterans formulated their own rules such as (1) to discuss their most intimate problems, (2) never to get mad and (3) to confine the discussions to the meeting period. Still the group often digressed and took up for discussion topics of general interest such as attitudes of civilians, strikes, religion, parental authority. At other times the therapist would introduce a topic; i.e., early rejection by parent or childhood experiences. The group decided that neither general topics nor the therapist's pet ideas meant much to them. They insisted on talking about themselves, bringing up their personal problems and hearing the therapist as well as other member's comments.

Individual experiences in the service, effects of being separated from it, somatic symptoms, harrowing experiences, childhood recollections, occasional dreams, their concepts of what is nervousness and similar topics were discussed. Not infrequently some of the more aggressive members would turn to the therapist with a scrutinizing demand that they are not getting any better. This healthy tendency to criticize would be encouraged. There always would be some that would tell the "doubting Tom" that he is being helped, that they derive considerable benefit from the session and that he would not keep coming but for the fact that he feels that the group discussions help him. The group would repeat every so often the need for self aid, for actively participating in one's own search for improvement. Greater toleraance toward prevailing cultural taboos, discussion of Negroes, religion, economic opportunities, newspaper headlines, would keep the discussion going. At times the sessions would degenerate into small groups vehemently discussing one point or another. The therapist would then intervene to bring about the group's cohesiveness. At times the session would resemble almost a debating club. The readiness of the members to refer to it as a club or an evening out, in explaining their whereabouts to their immediate family, was frequent.

In terms of some of the patients "it gave one a feeling of being one of many with nervous trouble —it gave confidence—it convinced one that he can make out well and that he is better off than others in the group." This ability, through the presence of the therapist, to participate and share in the group's common goal was as important an achievement as any in their progress to recovery.

These individuals, scared and regressed by the cataclysn of war and peace, unable to challenge the tasks of maturity, swamped by and yet intolerant of the chaos and inconsistencies of daily existence, these same people, found a benevolent, secure understanding situation. They were in the presence of an all grasping, understanding, and forgiving father figure. Their strivings for expression, for assertions, denied to them in their daily associations, suddenly became permissive and easy to bring out. They learned to work out successful integration within a group, humorously to gloss over their defects and concentrate on the objective, the purpose which interested the group as a whole.

Throughout the sessions, a gradual desensitization toward factors of civilian life nocive to them was carried out. The members repeatedly decried their loss of confidence, the lack of purpose or goal in their existence, the hostility toward civilians, their inability to cope with reality situations. As the group discussed and participated in a solution, the whole enormity of the complaint, its displacement and the possibility to see it in a new light became possible. The veterans not merely verbalized their life experiences; they lived, acted out and expressed the same doubts, incredulities and prejudices which are a part of themselves. A gradual reorientation toward accepting life as it is, an ability to deflate oneself, to take one's measure, without feeling hurt, became established.

The healthier social contact, the lack of temerity and the enhanced ego-valuation derived from the group setting carried along a strong bolstering effect that lasted long after the treatment session was over. The easy familiarity, the close friendship, the feeling of sharing in an endeavor made the session a keenly felt one emotionally. The group was experiencing an atmosphere of searching, feeling and living for a purpose; namely, that of understanding their reasons for living and striving. Many opportunities for educational and morale indoctrination presented themselves during the sessions. Periodically the veterans were seen in individual sessions in order to explore any further needs for more intimate guidance or catharsis. Whatever material was obtained could later be reelicited during the group session for its approval and understanding. Those in need of social guidance were referred to

the social service department. Further testing and vocational services were available for them. The medical and Vocational Rehabilitation services were made use of. The veteran felt not only a keen interest expressed in himself, he also regained the importance he had while in uniform. He was all the while learning to drop his defenses and allow himself to accept civilian existence without undue fears. To compete, to be challenged was not any more a cause for anxiety. It gradually became a contest and that was what it was meant to be. Even to lose was not unpardonable. Instead, it was considered human. The individuals had learned to smile again, to accept themselves with a bit of humor and a dash of undervaluation. The group often ventilated its belief that the source of their maladjustment were sown in the prewar years. At other times they claimed that it was aggravated or that it was primarily due to war experiences. In all cases the stress was not for something to be given to them; rather it was for "help me—as I want to help you all."

The veteran had been made to feel that life outside of himself goes on and asks for his aid. This was an important contribution of the group: how to work, in a minuscule and unimportant role, and still feel that one contributes to both one's own growth and that of others. This is often hard to grasp. Life's tasks are neither exciting nor dramatic. The dependency on fellow workers or employees is neither satisfying nor secure. The group's rivalries, its encouragement, the attachment of importance to the person's progress—this helped to add color and give impact to nature's cry within them for assertion and recognition.

Along with these activities, both in individual or group psychotherapeutic sessions, the clinic serves as a resource for psychiatric guidance to the community. Both in giving consultative opinions, in presenting the postwar problems of the veterans to fellow employees, at conferences, to local fraternal and religious organizations—a voice for the rational, an appeal for greater self-help and an interpretation of the emotionally handicapped veterans was made. Whether on a college campus, in a small forlorn farm, in the city or the hamlet, the solitary, emotionally in turmoil veteran stands who, but for the care and interest of the Veterans Administration program, would not have psychiatric help available.

The important consideration is that these men need help, not material nor pecuniary gain, but help in becoming identified and learning how to feel, hope and strive. Years of conforming and not liking it, of storing up hopes and dreams and the realization that some of those dreams will never come true are hard to accept. How to help smooth the rude awakening, how to elicit and strengthen what can be developed, how to teach young men the art of living, not fearing, was the clinic's task.

SUMMARY

The veteran whose needs for dependency were either activated or prolonged during the military service finds himself devoid of group solidarity and its concomitant strengths. The purpose of the psychotherapeutic approach in the clinic, by combining individual and group treatments, provides the situation through which a resynthesis of his social cognizance and a desensitization to his daily problems takes place. Men and their relationship to life about them, as well as men and their problems within them, have been the clinic's preoccupations. The group effort toward a reidentification with their cultural milieu from which they have strayed furnishes an impetus toward an acceptance of life realities. All resources, Veterans Administration and community, social or religious, are utilized. This therapeutic approach has given encouraging results in more than half of the cases treated.

440 N. Taylor.

WOMEN PAST 49 RESPOND BEST TO TREATMENT FOR CANCER OF CERVIX

Women past 49 respond more favorably to treatment for cancer of the cervix than do young women, two physicians of the Mayo Clinic, Rochester, Minn., have found in a study made of 3,798 patients at the clinic from 1915 through 1944.

Writing in the current (July 10) issue of *The Journal of the American Medical Association,* the physicians, Harry H. Bowing and Robert E. Fricke, say that "the patient more than 49 years of age has a definitely favorable factor influencing the five year cure rate."

Women 49 or older responded better to all types of treatment, except that younger women were more able to withstand the effects of surgery.

Twenty-nine per cent of the women between the ages of 30 and 49 who were treated before 1940 and who were traced by the physicians were living five or more years after leaving the hospital. In the 40 to 69 group, nearly 37 per cent were living five or more years after leaving the hospital.

The majority of patients with cancer of the cervix are in the menopausal years of their lives, the study shows. About two thirds of the entire group were from 40 to 59 years of age and only a few patients were under 30 or over 69.

The importance of early treatment, systematic examination after treatment, individualized therapy, and the harmful effects of treatment by inadequate methods were also emphasized in the study.

Seven types of treatment were used, the type being determined by the stage of the disease, the patient's condition and previous treatment, and other factors:

(1) Radium therapy, (2) roentgen therapy, (3) surgery, (4) surgery, radium therapy and roentgen therapy, (5) combined radium therapy and roentgen therapy, (6) surgery and radium therapy, and (7) surgery and roentgen therapy.

Combined methods are often more successful than any method used alone, the study points out.

The importance of early treatment is shown by the fact that among the patients at the clinic from 1915 through 1939, 65 per cent of those treated in an early stage of the disease and who were traced by the physicians were living five years after leaving the clinic.

Emphasizing the importance of systematic examination after treatment, the physicians say:

"The importance of a well planned follow up system cannot be overstressed. We recommend reexamination every three or four months for the first post-treatment year; every six months for the second post-treatment year; and every year thereafter."

ELECTROSHOCK THERAPY IN DEPRESSIONS

NOTES ON CLINICAL APPLICATION

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AND
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ELECTROSHOCK was introduced only nine years ago by Bini[1] as a mechanical method of applying Meduna's[2] doubtful concept of convulsions therapeutically. Because the procedure is simple, has a low mortality rate *per se,* and is relatively free from complications it has been applied to a wide variety of psychiatric illnesses. This wide application has not reflected necessarily the universal value of the therapeutic method, rather it often has indicated only psychiatric hope. Of such trials and observations there has been accumulated a reasonable body of knowledge of electroshock as a therapeutic agent.

Unfortunately most of the data in this field have been collected in institutions in which the clinical material has consisted of chronic psychotic patients. To workers in this field the objectives of reasonable safety and reduction of hospital stay are necessarily paramount. Kalinowsky and Hock[3] have reviewed the literature in this field and have presented an admirable technical guide for its application. Their concepts, however, are of chronic patients who have reached the state hospital. As Gildea[4] has observed, such patients have a different prognosis from those seen by the private physician early in the illness. The problems of therapy of these two groups of cases are also different.[5] Chronic psychiatric practice, for example, necessarily is weighted heavily with schizophrenia, a disorder in which electroshock therapy is of debatable value.[6] This debate is beyond the scope of the present report.

For the purpose of studying the clinical application of this therapeutic method attention has been focused primarily upon affective disorders showing depression. This is a group of patients in whom there is general agreement as to the value of electroshock therapy.[7] One hundred cases were studied of affective disorders admitted to a private psychiatric service of a large metropolitan teaching hospital and treated with electroshock therapy upon the prescription of the visiting staff with whose permission these data were obtained. For the purposes of this study cases showing "schizoid features" or similar qualifications have been excluded. Of the 100 cases studied, ninety-one were recorded adequately for the purpose while nine were not and hence were discarded. None of these cases had a complication of electroshock therapy, although complications have been observed in cases not included in this study. All of these patients improved and left the hospital to return to their usual occupations but ten of them relapsed, were subsequently readmitted, retreated and again discharged. Selection of this case material was with a view to study the following specific clinical problems: (1) The number of electroshock treatments required in: a. first attacks of depression, b. subsequent attacks of depression; (2) the frequency of electroshock treatments required for optimum results, and (3) the therapeutic requirements of "neurotic" depressions in contrast with "psychotic" depressions.

Of the ninety-one cases studied, forty-four (48 per cent) were treated in the first attack; twenty-five (27 per cent) were treated in the second attack; ten (12 per cent) were treated in the third attack; five (6 per cent) were treated in the fourth attack; five (6 per cent) were treated in the fifth attack and two (3 per cent) in the sixth attack. In each case electroshock therapy was given until the patient was back to his normal affective level. He was then observed from five days to two weeks and discharged from the hospital. The number of electroshock treatments required for these patients by attack is shown in table 1. From these data it is evident that no significant difference in therapeutic requirement is obtained in first and repeated attacks. For an individual case we often observed considerable constancy in the number of treatments required in repeated attacks.

Table 1.

Attack No.	No. Cases	Mean No. Est.
1	44	6.8
2	25	6.0
3	10	5.2
4	5	6.6
5	5	7.2
6	2	7.5

The frequency with which electroshock was administered in this series of cases was highly variable. A spread of as frequently as daily to as rarely as every eighteen days was found. The mean frequency of the 685 electroshock treatments studied was every third day. We were unable to correlate any factor with the frequency of therapy. We have observed that patients treated more frequently than every third day have greater confusion and recent memory loss than those treated less frequently. Our own observations confirm those of Levy[8] to the effect that therapy every fifth day gives less confusion and greater opportunity for supportive psychotherapy. Our experience with daily electroshock has been disappointing although Warson[9] has found it of help in selected cases. Transitory post-

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Presented before the Missouri Association for Neurology and Psychiatry, St. Louis, October 14, 1947.

shock organic excitement states were observed most frequently in the cases studied when therapy was given daily or every other day. Those patients with classical manic-depressive histories were observed to swing from depression to a hypomanic phase when electroshock therapy was given more frequently than every fourth day.

Clear cut differentiation between an endogenous, cyclothymic depression and depression of a neurotic person is, in many cases, difficult. The available data in these ninety-one cases were studied in an attempt to estimate whether the depression observed was a neurotic reaction to situational factors or rather endogenous and without relation to precipitating situations. In forty-six cases (50 per cent) we were unable to relate the attack to a precipitating situation. In many the history showed wide mood swings and a diagnosis of a manic-depressive reaction appeared clear cut. It was in this group that relapses were observed. In forty-five cases (50 per cent) there were strong situational factors such as the recent loss of a son in combat, death of a near relative and the like without a previous history of wide mood swings. Neurotic behavior and dependency were common in this group. These last were considered to be, for the purposes of this study, "neurotic" depressions in contrast to the first group who were classified as "psychotic" depressions. The cross-section behavior of the two groups in the midst of their attacks was, of course, indistinguishable. The mean number of electroshock treatments required in the "psychotic" depressions was 6.9 whereas in the "neurotic" depressions it was 6.2, a difference of no clinical significance. This confirms the clinical impression that electroshock is symptomatic rather than etiologic therapy.

The use of electroshock therapy as an adjunct to psychotherapy has been debated by several observers.[10] Unfortunately no adequate series of cases has been studied. The material we studied for this presentation gives no clear cut answer. We did gain the clinical impression, however, from these cases as well as others we have treated, that electroshock therapy has definite value in shifting the mood so that psychotherapy could be utilized and the patient treated more rapidly and with less suicide risk than is the case when, for some reason, electroshock therapy could not be applied. Bennett[11] also has reported satisfactory therapy of neuroses in which depression was the predominant feature. He has cautioned that anxiety with depression does not respond well to electroshock therapy. Our observations confirm his in this respect. Of the neuroses, electroshock is of value, in our experience, only in neurotic depressions.

This study has been restricted to electroshock therapy as a hospital procedure. We have not utilized this as an extramural measure because of our concept of it as only one part of the total psychiatric therapeutic program which the severely depressed patient should receive. Electroshock therapy, while of definite value in depressions, is a procedure which we have utilized only in those cases of sufficient severity to require hospitalization. Mild depressions have been treated on an office or outpatient basis without recourse to electroshock. This measure has been reserved for severe cases whose progress was unsatisfactory or in whom suicide was a definite threat.

Preshock medication of sodium amytal has been of assistance in decreasing apprehension. We have not utilized intravenous preshock medication as have others.[12] Our procedure has been to administer 180 mgs. of sodium amytal by mouth one hour before electroshock therapy. In many patients there is a postshock amnesia for the immediate preshock as well as the shock period. In our cases we have observed fewer postshock excitements when this technic is followed.

We have used 60 cycle alternating current exclusively in this study. In all cases the minimal current for the shortest possible time to produce a grand mal reaction has been used because it was observed that greater postshock confusion obtained when stronger currents for longer time intervals were applied. While it is true that no modern, approved electroshock apparatus is electrically lethal, it is equally true that the passage of an electric current through brain tissue produces neurophysiologic changes of pathologic significance.[13] This has been substantiated by electroencephalographic studies[14] as well as our own clinical observation of postshock organic mental status examinations. Psychotherapy with such confused patients is pointless as well as of little effect.

SUMMARY

Ninety-one selected cases of depression treated with electroshock therapy were studied. All of these cases improved sufficiently to leave the hospital and return to their normal pursuits. In none were there electroshock therapy complications. Forty-four cases were treated in first attacks of depression while forty-seven were recurrent attacks. One half of the cases were considered to be "psychotic" depressions and one half "neurotic." No significant difference in the electroshock therapeutic requirement was observed between first attack illness and recurrent depressions in subsequent attacks. No clinically significant difference was observed in the electroshock therapeutic requirement of "neurotic" and "psychotic" depressions. A treatment interval of three days was found to be satisfactory but if psychotherapy is also to be utilized an interval of five days is believed optimal. Electroshock therapy was used only as a hospital procedure. Preshock medication of sodium amytal by mouth has been found to be of value in decreasing apprehension. The minimal amount of current required for the production of a grand mal reaction is found to produce the least confusion and is considered least traumatic.

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ACUTE VOLVULUS OF THE STOMACH WITH SPONTANEOUS REDUCTION

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REPORT OF A CASE

It is said that the abdominal contents are fluid. This can account for the numerous difficult intra-abdominal problems which confront the physician in his daily endeavors, including volvulus of the stomach. This condition is sufficiently rare per se and sufficiently uncommon in association with anomalies, like diaphragmatic hernia, to deserve its being reported.

Considerable confusion is associated with the ailment such as considering it identical with cascade stomach, which is quite a different disease and bears no close resemblance to volvulus; or finding it necessary to differentiate it from a normal high stomach of the sthenic. It is also necessary to point out that volvulus, twist and torsion are synonymous terms and in their use no intimation should be given that different conditions are being described.

In 1938 Arthur C. Singleton[1] reported three cases of chronic gastric volvulus, reviewed the literature and not many cases have been reported since. Furthermore he offered a definition, then a classification which is useful. The definition is: "Gastric volvulus may be defined as an abnormal anterior or posterior rotation of part or almost all of the stomach about either the coronal or the sagittal axis of the body. The stomach, being fixed by the gastrophrenic ligaments above and by the peritoneum covering the second portion of the duodenum below, is limited in mobility between these fixed points only by the length of the gastrohepatic omentum, and may be displaced within these limits by extrinsic pressure from whatever cause. Pressure displacement of the stomach is, therefore, common but actual rotation of a part or almost all of the stomach is relatively rare and would seem to require unusually long gastrohepatic and gastrocolic mesenteries to allow of its occurrence." The classification he gives as: Organo-axial and mesentero-axial, total, partial, anterior, posterior, secondary, idiopathic, acute and chronic.

It seems that there might well be a division of cases into two great groups, one associated with the anomalies such as diaphragmatic hernia and a second occurring in a closed abdomen. To this latter class Dr. Singleton's given classification could be applied.

CASE REPORT

A housewife, 28 years old, was referred to the department on June 13, 1946, by O. L. Seabaugh, M.D., to determine the cause of her symptoms, principally belching.

Two weeks before her admission to the hospital she began to belch incessantly and so loudly that "folks across the street could hear her." Sometimes she would emit some of her food, recently taken, with nausea not at all a prominent symptom. Meals were consumed at regular hours with no difficulty in deglutition. Severe low abdominal pains "as if the intestines were being tied in a knot" appeared frequently, intermittently. Also she was having a brownish vaginal discharge after a sixty day amenorrheal period. It is to be emphasized that the patient never had dyspeptic symptoms before. The type of abdominal pain did not suggest one associated with ectopic pregnancy.

As a child she lived in a small community "lived on a mule, vaulted over fences and jumped off of barn roofs." Ten years previously she was cystoscoped and had a right indwelling ureteral catheter in place for five days. There is no more detailed information rela-

From the Department of Roentgenology of St. Francis Hospital.



Fig. 1. From film one and interpreted as a partial anterior organo-axial volvulus of the stomach.

tive to this event. Nine years previously she had had an abdominal section for the removal of her appendix, left tube and ovary. Since then her menstruation was often irregular and in 1944 there was an amenorrheal period of nearly two months which was uneventful and which threw her off guard this time. The patient stated that during the year of 1944 she had daily fever of from 99.4 F. to 100 F. for which no cause was ascertained.

Family History.—Father died of cancer of the liver. Otherwise there was nothing of interest.

Physical examination (taken from Dr. Seabaugh's record).—Heart, lungs, nervous system normal. Uterus increased in size, a bulging cul-de-sac. In the abdomen the only point of significance was a tender mass in the right lower quadrant. The temperature ranged from 99.4 F. to 100 F. during her four days stay in the hospital. She was a well nourished and developed woman.

Laboratory Findings.—Urine (per catheter) was straw colored, cloudy, 1010, albumin trace, sugar none. A few epithelial, white and red blood cells were present.

Blood.—Hemoglobin 75 per cent, color index 1.+, red cells 3,730,000, white cells 9,000, stabs 21 per cent, segmented 65, lymphocytes 13, monocytes 1 per cent. Kahn test was negative.

Gastric Contents Examination (after an Ewald test meal).—Free HCl 40 degrees, combined HCl 14 degrees, total 54 degrees. Microscopically, there were no abnormal elements.

Roentgen Examination.—Fluoroscopically, heart, aorta and lungs were normal. Diaphragm was smooth with clear costophrenic angles. Excursions were full and synchronous and no hernia was observed.

Deglutition was normal and entrance of barium into stomach free. Filling was allowed too rapidly to identify rugae. The stomach presented itself as a nondescript sac and no amount of palpation, which was painless, could alter the design. In the course of time a narrow curved band of barium left the upper medial angle of the sac and crossed the spine. There was no change in the contour of this sac all the time it was deemed safe to expose the patient to fluoroscopy.

Films taken routinely after fluoroscopy showed in the first (figure 1) a greater curvature apparently normal, though laterally two finger like projections suggested filling defects. The upper fluid level was ragged. The pylorus crossing at the first lumbar disk seemed pinched off and the area of cap and ring beyond was distorted. The gas filled transverse colon crossed disk two at a normal height though its direction was obliquely upward from there. Considering all evidence this was interpreted to be a partial volvulus.

The second film (figure 2) portrays just what was seen fluoroscopically and described except that the blunt sac had acquired an angular indentation and a peristaltic wave. A band of barium is seen in the pylorus crossing the level of the first lumbar intervertebral disk. Of interest is the altered, high position of the easily visible gas filled transverse colon, higher than the pylorus. It would indicate that the greater curvature of the stomach and transverse colon rose together.

Figure 3, taken in less than five minutes after figure 2, portrays plainly the stomach in its state of vulvulus. The greater curvature of the stomach is placed higher than the lesser curvature. Apparently the incisure is displayed. The cardia contains barium in a cloud design into which striae of the esophageal rugae are passing. The ring and cap are outlined apparently normally. The interruption of barium just beyond the cap is interpreted as one point of torsion. The other must be in the corpus and is hidden by barium. The wide duodenal curve, as usual in such conditions, is apparent and is not due to a pancreatic tumor. Some gas filled haustrations of the transverse colon are seen extending to the height of the lesser curvature of the stomach.

In figure 4 the design has been slightly altered, the greater curvature being higher than the lesser. The mass of barium pointing upward and laterally from the upper



Fig. 2. Portraying the stomach much as it was seen fluoroscopically, expelling barium through the extended pyloric end and duodenum. High gas filled colon is also visible above the pylorus.

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BY JULIO DE DIEGO

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border is not a hiatus hernia, for the film definitely shows it to be subdiaphragmatic. A complete anterior volvulus is portrayed in the last two films. Of interest is the large amount of barium in the small bowel, indicating gastric activity and no obstruction.

Figure 5 is presented to show the high transverse colon after a barium enema, a normal association, as is to be repeated later. The oblique course is due to its distal elevation.

The patient left the hospital after this examination, continuing her symptoms, and on June 27, when an emergency arose, an abdominal section was performed by Dr. D. B. Elrod to relieve the patient of an ectopic (ruptured tubal) pregnancy, much blood being present in the abdomen. The recovery was uneventful and the patient returned home July 7, 1946, where she continued the belching for one week when it ceased as suddenly as it had begun. During the operation the stomach was not investigated.

On August 10, 1946, fluoroscopically, a fish-hook stomach, normal in position, was found carrying on normal physical function. It is portrayed in figure 6 which also shows that the transverse colon had assumed a normal position. The patient is now symptomless.

DISCUSSION

The causes given for this condition are quite numerous. Of course the associated diaphragmatic hernia must be included at the present time as the most frequent. Association of ulcer of the duodenum has been claimed. The enlarged spleen is mentioned more frequently[2, 3, 4] and by reason of the anatomic relationship, especially the gastrosplenic ligament, is the more plausible etiologic factor, particularly if the greatly enlarged spleen, as in Banti's disease, is wandering. Babcock[5] suggests as causes: "Abdominal injury, gastroptosis,



Fig. 3. After energetic peristalsis a stomach design is discernible with the greater curvature higher than the lesser. An apparent cap is seen at the level of the twelfth thoracic vertebra. Note wide duodenal curve. The gas distended colon is seen between the spine and stomach.



Fig. 4. Indicates further alteration of the design of complete volvulus. The varium mass at the upper angle is a portion of the esophagus and not a hiatus hernia.

relaxation, stretching or rupture of gastric ligaments, dilatation of the stomach, a heavy meal or loss of splanchnic control." Adhesions[6] were the cause in one of my cases.

That the stomach with all its downward tractions by weight of food and the great omentum could get into the position of volvulus is somewhat surprising. What would hold the slippery organ in such a state for a matter of weeks and suddenly release it presents a problem undetermined.

The symptoms of the condition are also numerous and varied. My first impression on seeing such patients, considering my three cases, was that I was dealing with a neurotic. The belching is typically the hysterical type. Other symptoms are the taking of food or drink with impunity today which was blamed for a paroxysm yesterday; the pain, or discomfort of gas, now referred to one portion of the abdomen then to another; now coming just after food, then after fasting; diarrhea today, normal bowel movement the next followed by constipation; normal gastric chemistry today, hyperacidity one day, hypoacidity the next, all occurring in the absence of determined physical findings and being detected only roentgenologically or by means of surgery. Of course the acute volvulus produces the acute surgical abdomen if the circulation is interfered with and the diagnosis is made after the abdomen is open.[7] In short, varied abnormalities or anomalies may be simulated. In this case belching of a nervous type was the prominent symptom.

An opportunity was afforded through the courtesy of Dr. R. A. Ritter to assist at a postmortem



Fig. 5. Portrays the high transverse colon, the usual accompaniment of volvulus. Note the oblique instead of transverse course.

examination. Together we gave the matter of volvulus of the stomach our attention. The long anterior incision was carried only to the umbilious. From there a left transverse incision was made to about the anterior axillary line. Through an opening so produced our field of study was accessible and other abdominal contents were kept in place. The omentum was the only thing at first visible. We pulled it aside, found and grasped the pylorus and learned that by energetic traction it could be moved upward and to the left but not beyond the ensiform cartilage. We then sought the greater curvature of the stomach and, by experimenting, found we could produce the more real anterior volvulus by fastening a forceps at about the junction of the sinus with the corpus and pushing the greater curvature, so held, cephalad and to the left. Thus was produced a design as is seen in figures 2 and 3, but especially in figure 3 and also 4. Further deductions made were that the narrow line of barium seen crossing the spine in figure 2 is not wholly duodenum but partly the pyloric end of the stomach which has become elongated and narrowed in the displacement process. This narrowing could well afford partial obstruction to the passage of food into the duodenum, naturally occasioning distress. Considering figure 3, the left axis of rotation was interpreted to be just beyond the cap and at the fixed portion of the duodenum. The other axis of rotation in our study was found to be the gastrosplenic ligament.

This stomach was empty and a volvulus was readily produced, but not readily maintained. The distance between greater and lesser curvature was not so great as is indicated in the films but it was easy to conceive that the weight of food and drink or barium in the stomach could and would drag the lesser curvature farther down and accentuate the deformity. The erect posture also would be an influence favorable to this effect.

As we drew the greater curvature cephalad, forward and to the left the omentum and transverse colon, with gastrocolic ligaments of normal length, came along. Here was enacted what almost every author on the subject mentions; namely, the high position of the transverse colon, but with a normal gastrocolic ligament. Professor S. Azmy and Dr. Ahmed[8] thought the rising gas distended transverse colon was responsible for volvulus by carrying the greater curvature upward and forward by reason of a long gastrocolic omentum. Their films and mine support their contention. But in our study we concluded that an abnormally long gastrocolic ligament is not obligatory.

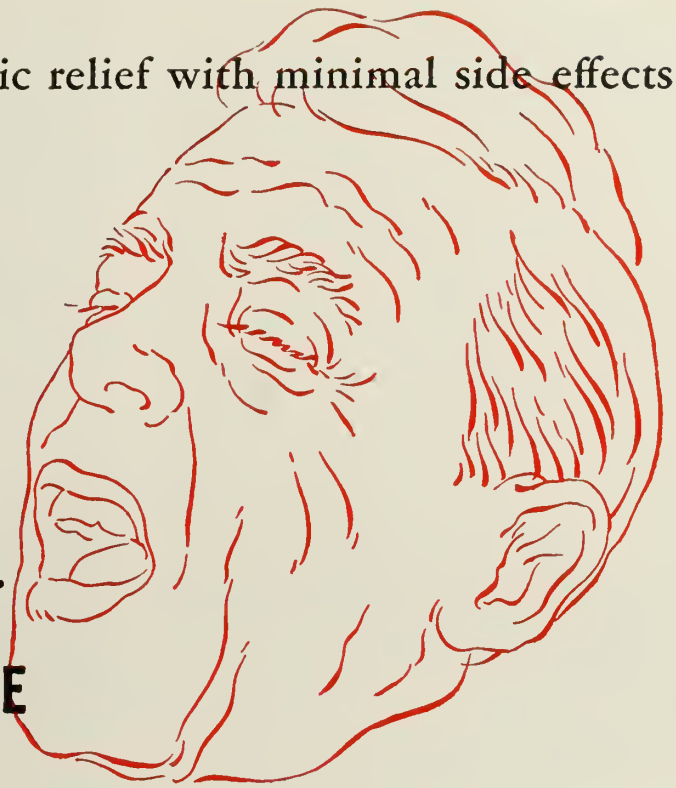
Also it was noted that by reason of the high and rotated position of the pyloric end of the stomach the duodenum makes a wide curve which is not unlike that formed around the head of a pancreas involved in a tumor mass.

Our effort then was to attempt a posterior volvulus which, with great difficulty, led to an incomplete one, the gastrophrenic ligament and diaphragm proving to be obstructing elements to the procedure, as a dragging omentum also would be. Had not posterior organo-axial volvulus been re-



Fig. 6. Stomach has been returned to normal spontaneouslv. The cap is below the second lumbar vertebra. Fluoroscopically perfect cap and ring were observed. The colon has returned to its usual position.

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2. Loveless, M. H.: *Am. Jl. of Med.*, 3: 296, 1947.
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liably reported we would have concluded that it was an impossible situation.

It is felt that the mechanism of volvulus of the stomach has been reproduced artificially. It seems fairly easy to understand how a large, wandering spleen could effect a volvulus. A gas distended transverse colon might carry the stomach upward but the distention could hardly be expected to continue four weeks unless there was intestinal obstruction or some other cause for maintaining the position, yet in this case no cause was apparent and both colon and stomach returned to normal. It is difficult to understand by what other conditions and how volvulus could be occasioned. All nonmechanical volvuli must owe their existence to some quirk of the nervous system which has not been clarified. Gynecologic surgeons do not report the association of ectopic pregnancy and volvulus, so the connection has not been explained and seems incidental.

SUMMARY AND CONCLUSIONS

1. A case of acute self reduced volvulus of the stomach, anterior, organo-axial type, is reported. Various phases of torsion are shown.

2. An endeavor was made to understand the mechanics of the condition by studies on the cadaver.

3. The two axes of anterior organo-axial volvulus of the stomach appear to be: (a) the fixed portion of the duodenum and (b) the gastrosplenic ligament.

4. An associated ectopic pregnancy is looked upon as a coincidence, unimportant since the symptoms continued after the operation.

5. The length of the gastrocolic ligament need be of no concern in the matter. If it is normal or short the transverse colon simply follows the stomach, or the gas filled transverse colon displaces the greater curvature upward. In fact, the volvulus would seem to be less likely to occur with a long ligament.

6. The wide duodenal curve is called to attention as of importance.

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CAUDAL ANALGESIA

ITS APPLICATION AND DETAILS OF TECHNIC

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Since July 1945, an intensive effort has been made at St. Louis Maternity Hospital to reduce to its most elemental form the technic of caudal analgesia. As the work has progressed, there have been requests both from individuals and groups for a technic discussion that would contain suggestions that have borne fruit in the development of a basal caudal technic. There have been innumerable articles published since Hingson,[1, 2] and Edwards and Southworth[3] first popularized caudal analgesia, but with the exception of Lundy's[4] substantial contribution, they mainly have been concerned with minute discussions of advantages versus disadvantages and rarely with "helpful hints" on basic technic. For these reasons it is felt that publishing details of technic may be of some aid.

To evaluate properly any patient in terms of the possible success of caudal analgesia, a preliminary examination should include: (a) careful palpation of the sacral hiatus prior to the actual caudal attempt, preferably early in pregnancy; (b) an attempt to educate the patient as to what she may expect while the initiation and maintenance of the caudal analgesia progresses.

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Preparation.—Complete and thorough surgical preparation of the field from L-5 to the tip of the coccyx should be carried out carefully. Sterile technic breaks down more in this respect than in any other individual aspect.

As a point of technic, it should be remembered that antiseptic solutions are painful when allowed to run over the rectum or the vaginal outlet. One way to avoid this is to place an unused cotton sponge at the base of the gluteal fold directly over the rectum while preparing the patient. The patient then should be draped in any satisfactory, but surgically sterile, manner.

Initiation of the Caudal.—The most important question in the initiation of a caudal is "When do I start?" In the case of the primipara, first in importance is the position of the child's head. It should be at or below the ischial spines. Second consideration should be given to the type and character of the contraction. It should be a regularly reoccurring contraction every 2½ to 3 minutes, lasting about 45 seconds, and should be well developed and severe. Third in importance is the condition of the cervix. The cervix should be at least 2 to 2½ fingers (4 to 5 cm.) dilated and well effaced.

In the case of the multipara, the only answer is

to initiate the caudal when one thinks the patient is "going ahead" in labor. If there is any question, place the needle in the hiatus and do not develop an anesthetic level. Then if the multipara goes through labor quickly, only a matter of a few minutes will be needed to build a satisfactory level. Simply leave the stilet in the needle and strap the needle in place. If a caudal is started too early, the patient may be forced out of labor.

Palpation.—Palpation should be done entirely with the left hand if the operator is right handed. If the operator is right handed, the patient should be placed at the extreme right edge of the table on her left side. The left shoulder and the left hip should be at the table edge. The left, or bottom leg, should be extended completely, while the top, or right leg, should be flexed 90 degrees at the hip and 90 degrees at the knee.

Palpation should be initiated with the middle finger of the left hand. By far the most important landmark is the sacrococcygeal junction. This landmark stands out in the middle of the gluteal fold as a bony knuckle. Palpation, however, should be initiated at the extreme tip of the coccyx. When this point is described, the palpating middle finger of the left hand should be drawn slowly cephalid in such manner that the sacrococcygeal junction should next be noted. In most cases the hiatus may be entered if, without determining further landmarks, the needle is inserted about a centimeter and a half above the sacrococcygeal junction. The next point is an attempt to palpate the laminae formed on either side of the midline by the failure of fusion of the fifth sacral vertebra. This failure of fusion is felt in the form of alae, whose base is directed toward the sacrococcygeal junction and whose apex (in the average case) will be palpated between S-3 and S-4.

Insertion.—When the hiatus has been determined satisfactorily, the middle finger of the left hand should be placed in such a manner that the tip of the finger just covers the apex of the hiatus. The ring and little fingers should be spread to cover the posterior portion of the right, or elevated buttocks, and the first finger and the thumb should be similarly spread below the apex. Once the left hand is in this position (see figure 1), it should not be moved or the insertion of the needle may well be off center and an episacral insertion may take place.

The needle is grasped in the right hand with the index finger on the base portion of the stilet and the thumb and middle finger meeting on the lateral sides at the collar to provide support. The needle is inserted through the skin, the subcutaneous fat, the sacrococcygeal ligament and to the floor of the sacrum with one rapid motion of injection. If this injection is done rapidly, there will be no more pain attached to the insertion of the needle than there would be to the injection of the skin with an analgesic agent. The insertion of the needle should be made at a 135 degree angle with the finger at the apex of the hiatus.

Once the needle has reached the sacral floor, it

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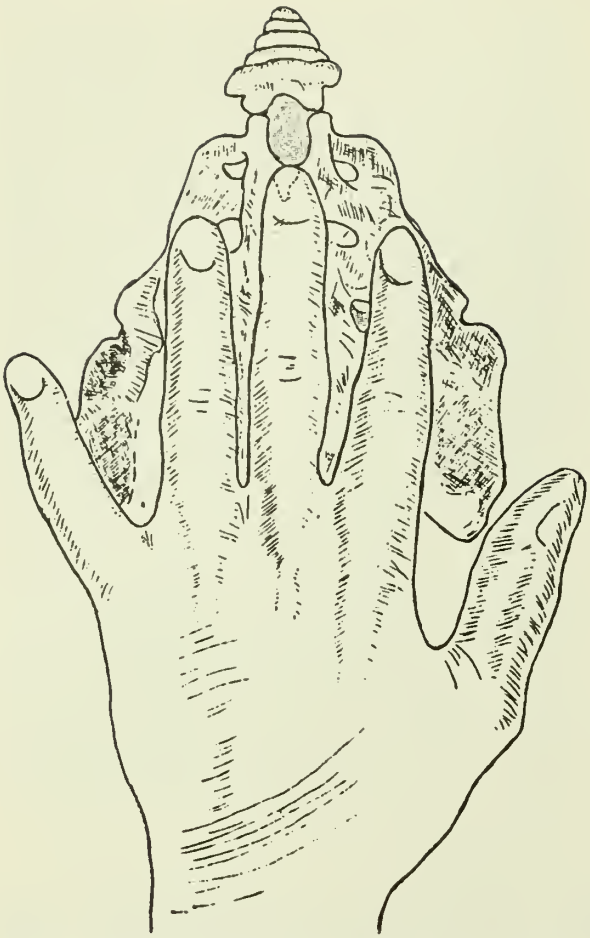


Fig. 1. Position of left hand at termination of palpation of the sacral hiatus. The middle finger should remain at the apex of the hiatus until the caudal needle is inserted fully. (Sketch provided by Dr. Miriam Pennoyer.)

should be withdrawn slightly to disengage the point from the bony matrix, depressed about 15 degrees more toward the gluteal folds, and slowly inserted into the hiatus. After the hiatus has been entered successfully, it is well to direct the point of the needle toward the roof of the sacral canal rather than the floor. A venus plexus frequently is encountered on the floor of the sacrum, and careless insertion of the needle may well result in a "bloody tap." If difficulty is encountered (usually in the form of bony exostosis) in the insertion of the needle after the tip has entered the hiatus, it is advisable to rotate the needle through 180 degrees on its longitudinal axis and, in turn, depress and elevate the head of the needle, meanwhile applying steady pressure in an attempt to continue the insertion. The needle should not be seesawed in and out of the canal in an attempt to work past an obstruction. This will only result in real trauma to the floor of the sacrum and, almost surely, a "bloody tap."

After the needle has been inserted as far as the hub, the stilet is removed by the thumb and first finger of the right hand while the left hand is used to separate the gluteal folds; thus, preventing contamination of the open lumen of the needle by the buttock. Then gentle aspiration is attempted with a syringe and adapter in an effort to determine an obscure dural tap by the return of cerebrospinal fluid.

To check the position of the needle, 4 cc. of air may be inserted rapidly through the adapter tube. If the needle is episacral, air will be felt over the posterior wall of the sacrum, providing the patient is not too obese. If the needle is placed properly, the air will enter the sacral canal with a characteristic, easy rush. When difficulty is encountered in expressing air through the syringe, or when the plunger shows a tendency to jump, the needle is either episacral or the bevel, while in the canal, is directly opposed to the roof or the floor of the sacrum. Rotating the needle 180 degrees will immediately satisfy the operator that the latter condition is not present. Care must be taken not to inject too much air into the sacral hiatus. Patients frequently will complain of a severe pain in the back of the neck or shoulders as further injection of the anesthetic solution compresses the air in a relatively small space.

Another help in determining the successful needle insertion is the manner in which the needle enters the canal. If slight to moderate resistance is encountered and the needle can be felt grating along the bony floor, some degree of surety as to the proper placement of the needle may be entertained. Also, a help in this direction is that unless the hiatus is a remarkably wide one (figure 1), the needle properly placed within the sacral canal will be held in position with a moderate degree of fixity. The episacral needle can be manipulated easily through 45 degrees from the midline in most instances.

If blood wells back through the lumen of the needle when the stilet is removed, the operator may be fairly certain that his needle is within the sacral canal and that he has ruptured one of the venules of the sacral floor in the process. If a "bloody-tap" occurs, the stilet should be replaced, the needle then rotated to 180 degrees, and a short wait of two to three minutes should be provided to allow ample time for clotting. Any time that marked increased pressure is necessary to insert the anesthetic solution, the possibility of blood within the lumen of the needle or tubing should be borne in mind. If bleeding continues after a short wait, the needle should be partially withdrawn and reinserted carefully.

Yet another sign seen in some patients of the proper placement of the needle will be the siatic sign. This is a sudden jumping of the patient's leg, or an expression of distress on the part of the patient, with a pain pattern following the sciatic distribution either after the sudden injection of air or with the initial injection of the anesthetic solution.

If 1.5 per cent Metycaine is used (as it is routinely at St. Louis Maternity Hospital), it should be injected slowly, 10 cc. at a time, until a level is established. The type of patient the operator is dealing with must be constantly borne in mind. If the patient is noticeably obese, 40 to 50 cc. of Mety-

caine may be required to obtain a satisfactory level. If the patient is the esthenic, thin, poorly nourished type, 20 to 30 cc. frequently are sufficient. During the induction time, an effort should be made to alleviate pain in from fifteen to twenty minutes. If the Metycaine is injected too rapidly, a marked fall in the blood pressure may occur. However, it is just as important not to inject the Metycaine too slowly as it is not to inject it too fast. A significant number of the intractible, propioceptive type of deep pain distresses are most certainly due to a slow attainment of caudal level.

Following a routine induction, there will be a spotty blanching of the skin of the feet surrounded by areas of erythema. This is due to early vasodilatation changes occurring following the involvement of the sympathetic nervous system. The feet will then become warm and red. Since most women in real labor have cold, clammy feet, the change is quite remarkable. Small areas of "goose-flesh" will appear locally over the buttock and thighs five minutes after the caudal has been started. Within ten to fifteen minutes after the caudal has been started, there will be a definite sphincter relaxation, and a rectal examination at this time will demonstrate an anus that would readily admit two to three fingers. Perineal involvement occurs about ten minutes after the start of the caudal. This can be demonstrated by some loss of sensation to pin prick over the skin about the rectum and the labia. Also of note is that a patient, bearing down in the second stage of labor, will quickly lose the bearing down sensation or urge.

Some patients will complain that they have pain along the back of their legs (sciatic sign), or will complain that their legs or feet are getting numb. At this point one of the most important of observations should be made. Within five minutes of the first injection of 10 cc. of Metycaine, if the injection is intrathecal, the patient definitely will demonstrate early loss of motor function. The patient should be asked repeatedly to wiggle her toes during the entire caudal induction time. If motor power is retained, it is an absolute indication that the operator is not dealing with an obscure dural tap.

It should be remembered that the propioceptive sense will lag about five minutes behind the sensory level. Some of the last complaints to be alleviated are low back pain and an ache in either groin, both propioceptive indications.

The patient always should be turned on her back before the caudal is initiated. This is to protect the patient against a severe blood pressure fall. With the patient on her back, an initial blood pressure should be taken. Thereafter, during the initiation of the caudal, the blood pressure should be taken frequently for the first ten minutes and then every five minutes until the caudal is well established and the patient's blood pressure has stabilized.

One may expect confidently that the normal early drop of the systolic blood pressure will run from 15 to 20 mm. of mercury. This should not be alarming to the operator. If the blood pressure drops, it may be brought back to normal in any one or all of the following ways: First, 50 mg. ephedrine may be injected, half intravenously and half intramuscularly. This will raise and hold the blood pressure satisfactorily in many cases. However, many patients will become nauseated following the injection of any of the vasopressor drugs and, for this reason, they should be avoided in most instances. Second, a slight rise in the systolic pressure is noticed frequently by the administration of 100 per cent oxygen to the patient. This measure, however, is only of value when the patient definitely demonstrates air hunger and should be used routinely if the blood pressure drops to 70 mm. systolic, as an added protection to the baby. Third, if the legs are elevated to a 90 degree angle with the trunk, the blood pressure will jump back to normal limits within from 30 seconds to a minute's time. However, this may be a passing elevation and a secondary drop will occur. Fourth, and by far most important, is to turn the patient on her side (either right or left) and the blood pressure will return to normal limits within 60 seconds. This is the safest and, by far, most effective method of controlling blood pressure and has seldom failed to work to a completely satisfactory degree.

It is interesting to note that many caudal patients with a systolic blood pressure ranging from 75 to 90 mm. show no evidence of air hunger or a picture of shock, that one immediately associates mentally with this range of blood pressure. The patient, instead of appearing shocked, will be warm, comfortable, quite calm, thoroughly in possession of her faculties and even cheerful and laughing. It is unnecessary to worry about these patients regardless of the blood pressure, unless the systolic pressure ranges in the region of 70 mm.

The initial blood pressure drop, which is to be expected, will, in the average case, be returned to low normal limits within half an hour. A new blood pressure level is established for the duration of the caudal analgesia at a level approximately 10 to 15 mm. below the previous systolic reading and with a 5 to 10 mm. diastolic reduction.

An explanation of the success in raising the blood pressure of a patient under caudal analgesia by turning the patient on her side may be encountered in a passing observation of normal full term gravid females in early stage 1 labor, but not under the influence of any medication. It was observed that if these patients were turned on their sides and allowed to remain there for periods ranging from ten to twenty minutes, (adequate time for preparing the patient and insertion of the caudal needle) and then turned back in a routine supine position, better than 90 per cent of all patients sustained a systolic blood pressure drop of from 5 to 30 mm. This blood pressure drop might be explained by the theory that the weight of the gravid uterus is suddenly returned to the lower thoracic and lumbar sympathetic chain; thus, causing a drop in blood pressure due to suddenly applied weight. If this pressure is relieved at once by turning the patient on her side, the reverse appears to be true; namely, that the blood pressure should, and does,

rise quickly to within respectively normal limits as the result of relieving the aortic sympathetic chain of its burden of a full term gravid uterus.

Maintenance of the Caudal.—The amount of anesthetic agent necessary to maintain an established level varies completely with the individual. An injection of 10 cc. of Metycaine may be necessary every ten minutes or every forty-five minutes. The smaller and thinner the patient, and the smaller the canal, the longer the Metycaine effect will last. Fat tissue directly absorbs Metycaine and any obese patient will need relatively a large amount of Metycaine. Each case must be analyzed and directed individually.

The barbiturates are the direct counteractant to the effect of Metycaine on the central nervous system and should be administered routinely in any caudal that is expected to last over two hours. Otherwise, the repeated injection of Metycaine will leave some individuals jittery, nervous or apprehensive. The patient should be turned from side to side at least at hourly intervals and her back massaged to prevent distress.

The patient's psyche is of real importance in the maintenance of a caudal. A caudal room should be used whenever possible. A radio may be played if the patient desires it. Light literature should be made available to occupy the patient's mind, and any other procedure calculated to relieve anxiety should be initiated. To keep the patient calm and quiet and to maintain her confidence is one of the major requirements in the maintenance of a successful caudal. If the patient has had some degree of premedication before the initiation of the caudal, she may well sleep during the remainder of her labor and delivery.

The most desired caudal level for long range maintenance is complete involvement of the sensory components of the tenth thoracic nerves. These nerves run across the abdomen to encase the umbilicus for a distance of about two inches above or below it. The best caudal level is that which is maintained from two to three inches above the umbilicus. If a level is allowed to fall, it may take approximately twice as much Metycaine to replace the level as it previously did to acquire it.

A large amount of fluid by mouth will tend to nauseate the patient and should be discouraged. If nausea has been present previously in the patient, she should not be allowed fluids other than to rinse her mouth.

Motor involvement in the lower extremities may take place slowly after the second hour of caudal maintenance. This is to be expected and the operator should not be alarmed by its onset.

Postpartum Care.—The area of needle insertion should be covered with sulfathiazole ointment and a clean No. 10 gauze sponge placed over the area. An opium derivative, preferably 1/32 gr. of dilaudid, should be given before the needle has been removed from the hiatus. Some type of analgesic should be given in all cases. This is to tide the patient over as the caudal level begins to fall.

If the patient has any distress in the region of the needle site, heat applications for twenty-four hours are indicated. In most cases distress at the caudal site will be relieved in from twenty-four to forty-eight hours. If the distress is still present at the end of forty-eight hours after delivery, infrared treatments for twenty minutes twice a day are suggested.

One Shot Caudal.—With a patient late in the second stage of labor and bearing down with her contractions, it is perfectly possible to relieve pain and distress in ten minutes time. The hiatus is marked by palpation as previously described and a two inch fascia needle is attached to a 20 cc. syringe and inserted directly into the canal. The syringe should contain 4 cc. of air and aspiration should, in all instances, be performed routinely although the danger of a dural tap is negligible. Air may be injected to make certain that the needle is placed properly. Then, with the patient still on her side, from 30 to 40 cc. of Metycaine may be injected within five minutes time. Motion of the patient's toes must be observed constantly during the first two or three minutes to insure lack of motor involvement. From 30 to 35 cc. should be used in the average sized individual and 40 cc. in the larger woman. The fascia needle and syringe should then be removed, sulfathiazole ointment and a clean bandage applied to the insertion site and the patient quickly turned on her back and placed in stirrups. An hour's time at least will be available to the operator for the delivery and third stage care. The patient will quickly lose the bearing down sensation. The abdominal component of her pains will probably take about ten minutes to subside. At least five minutes, if possible, should be taken after the first painless contraction is observed before the patient is delivered in order to avoid proprioceptive distress as the head distends the vaginal outlet. An opium derivative should be given to those patients routinely as soon as the birth is effected.

Blood pressure drops will occur routinely with this type of caudal and ephedrine (50 mg.) should be used for any severe drop. The pain, distress and excitement of the second stage of labor will provide sufficient stimulation to the patient's circulating blood volume to counteract most of the severe blood pressure drops.

Use of the Catheter Set.—The use of the catheter set is indicated in all cases in which the caudal may run for more than four or five hours. The No. 16 gauge catheter needle with the stilet in place should be inserted until it has just entered the sacral hiatus, the stilet then removed and the catheter inserted through the lumen of the needle. All catheters are marked off in centimeters and it will be noted that when the catheter has entered the lumen to the 11 centimeter mark, the tip will appear at the bevel of the needle. The catheter should be inserted into the hiatus until the 16 to 17 centimeter mark is flush with the entrance to the caudal needle lumen. When the needle is within the sacral hiatus, the catheter will slip easily past the 11 centimeter mark. If this does not occur, the needle either has

been placed in an episacral position or the bevel of the needle is in direct contact with the bony wall of the sacral canal. A 180 degree turn of the needle and further attempt to pass the catheter will immediately eliminate the latter possibility. Once a catheter has passed the 11 cm. mark, it should never be pulled back. The bevel of the introduction needle is razor sharp and a catheter may easily be cut off in the sacral canal if pulled back against the bevel once it has passed beyond it. With the catheter in place, sulfathiazole ointment should be applied liberally to the insertion region, sterile cotton batting applied to completely surround the catheter at the insertion site and the catheter folded at a 90 degree angle and allowed to run up onto the surface of the right hip.

Because the anesthetic agent is injected drop by drop in this method, it takes much longer for an induction time to be completed. The average induction time in the catheter system will run somewhere between twenty-five to forty minutes.

Caudal for Thrombophlebitis.—During the last three years the use of caudal analgesia in thrombophlebitis has become more and more popular. I do not propose to argue the merits of peripheral vasodilatation as opposed to venous ligation. However, I do feel that caudal is infinitely more malleable as a weapon in the field of maintained vasodilatation than the various parenteral dilators or other needle methods such as spinal or paravertebral block.

Obviously, a single puncture with a needle, such as in caudal, is an improvement over the multiple punctures and painful infiltration necessary for a satisfactory paravertebral block. Caudal analgesia has the added advantages of duration of maintenance, comfort of the patient and, when necessary, the ability to reduce the level to procure a rest period and then to return a satisfactory level without further painful puncture.

A satisfactory caudal level for a peripheral or pelvic thrombophlebitis should run to, or include, T-12; in other words, approximately four fingers breadth above the symphysis. This level in the average size individual can be achieved with 20 to 30 cc. of 1.5 per cent Metycaine. Generally a satisfactory level can be maintained with an additional 10 cc. every fifty minutes or an hour. Vasodilatation best occurs with a minimal level maintained over a rather lengthy period.

Previously discussed technic has consisted of initiating and maintaining the caudal for four hours in cases of thrombophlebitis, following this with a four to six hour rest period and repeating the process for another four hours. There have been several instances of return of pain and distress to the involved leg following an initial four hour caudal period. It has not been necessary to repeat the caudal for any patient when the initial level has been carried for a period of eight hours.

Use of Caudal in Preeclampsia and Eclampsia.—Caudal anesthesia has been used with moderately successful results in controlling the hypertension associated with eclamptic states. A level is initiated slowly in cases of preeclampsia or eclampsia. This is an extremely important point. It is perfectly possible to put a severe hypertensive patient into shock with too rapid an induction time. A particularly important aspect of this therapy is the realization that the caudal may and should be initiated whether or not the patient is in labor. Several episodes of severe preeclampsia have been brought under control by this procedure until diuresis could be established by the usual routine methods.

There is real value of maintaining a caudal level postpartum for as long as forty-eight hours to control the blood pressures in advanced cases until the natural postpartum diuresis sets in. The highest incidence of convulsions in the eclamptic patient is in the immediate postpartum period. An indwelling catheter should always be placed in patients whose caudals are to be maintained for more than an eight hour period.

Caudal Analgesia as a Differential Aid in Hypertension.—Many hypertensive patients are brought to the consideration of the Smithwick operation (or some modification thereof) by their medical consultants. In an attempt to evaluate the possible success of such operations the use of caudal has been added to the variety of aids now immediately available.

A note of warning should be injected. This is without doubt the most difficult caudal to initiate and control. The caudal level must be slowly attained with individual injections of 5 cc. of Metycaine after the first 20 cc. have been injected in the routine manner. This not only gives the operator better control of the ascending level, but avoids too sudden or severe an insult to an already seriously involved autonomic nervous system. As in the eclamptic patient, it is easy to shock an essential or malignant hypertensive patient by too rapid a blood pressure drop even though the ultimate blood pressure may not reach below levels of 150/100 mg.

SUMMARY

A variety of suggestions have been presented to aid in the initiation and maintenance of successful caudal technic. Its use as an analgesia and anesthesia has been described at length. In addition, a few special usages for caudal such as in thrombophlebitis, preeclampsia or eclampsia, and as a possible diagnostic aid in hypertension have been suggested.

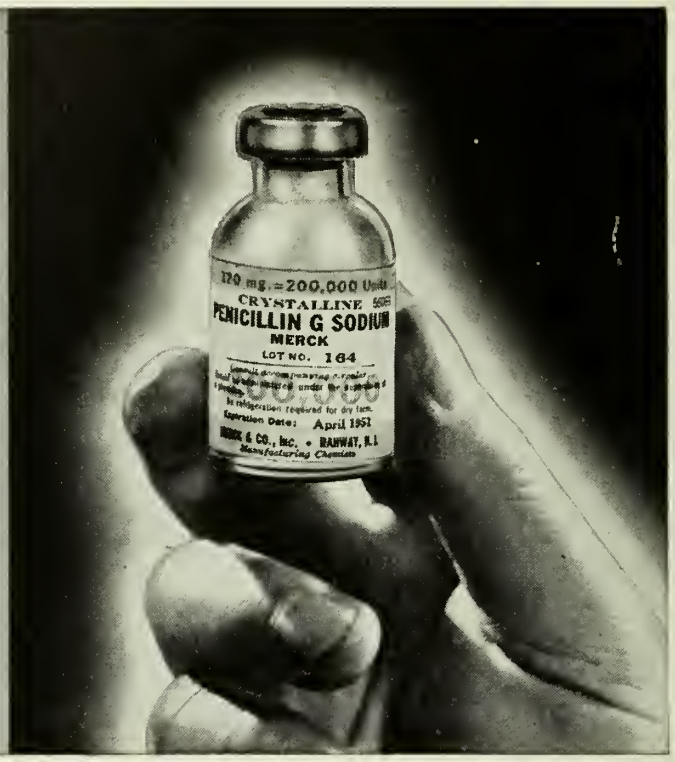
The aid of Dr. R. A. Hingson has been invaluable in the development of the basic caudal technic employed at St. Louis Maternity Hospital. Drs. F. R. McFadden, C. R. Gulick, W. E. Chalecke, E. H. Keys and Thomas Kemper have also made important individual contributions during the last two and one half years.

St. Louis Maternity Hospital

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REPORT OF TWO UNUSUAL CASES

RALPH S. CASFORD, M.D., *Kansas City*

IT HAS LONG been recognized that scarlet fever may cause kidney involvement in most any degree and in varying grades of severity. The following case reports are an attempt to cite two instances in which the disease produced acute fulminating symptoms which, although not developing clinically for some days after the original illness, did eventually produce an acute nephritis of great severity.

REPORT OF CASES

Case 1. A 16 year old white boy was admitted to Bethany Hospital, Kansas City, Kansas, on February 3, 1938, because of generalized edema which had its onset about two weeks before with puffiness around the eyes and ankles. The swelling of the feet and ankles was noticed first by the patient because he said it seemed as if his "shoes were too tight."

On January 13 preceding, he had "caught cold" and had a rather severe cough followed in a few days by a sore throat. The latter complaint was severe enough to send him to his physician for treatment. Following recovery from the throat ailment, he had spent most of the time in bed. The last ten days he had had severe headaches with recurrent nosebleeds and on one or two occasions mild convulsive seizures.

On admission the patient was a well developed young man quite acutely ill. The temperature was 100 F., pulse 80, blood pressure 150/100, respiration rate 28. There was marked puffiness about the eyes, moderate congestion of the nasopharynx with a few blood crusts in the right nostril. The cervical lymph glands were moderately enlarged. The chest was clear, the heart sounds normal and there were no palpable masses in the abdomen. There was a definite pitting edema of the feet and ankles. The urine was cloudy, alkaline, specific gravity 1.025; albumin 2+, sugar negative; microscopically there were 2 to 6 white blood cells per high power field and red blood cells 4+. The blood showed a hemoglobin of 65 per cent, red blood cells 3,400,000, white blood cells 23,350 with a polymorphonuclear count of 92 per cent. The blood Wassermann and Kahn were negative. Blood chemistry showed sugar 82 mgm. per 100 cc., urea nitrogen 43.42 mgm. per 100 cc.; nonprotein nitrogen 60 mgm. per 100 cc. Blood culture was negative. The eyegrounds were normal and roentgen ray of the sinuses normal. A diagnosis of acute glomerulonephritis was made on the basis of the history and findings and the patient was put on a bland liquid diet with fruit juices and restriction of the protein intake. He remained in the hospital about six weeks. His course was stormy, characterized chiefly the first three weeks by an increase of the edema, gradual decrease of urinary output, coma and, at the height of the disease, two or three convulsive seizures that were quite ominous. During the first two weeks this boy was extremely ill, vomiting any liquids given and restless and requiring frequent intravenous feedings and hypodermics for rest. I resorted to 5 per cent glucose intravenously on several occasions and three transfusions of citrated whole blood of about 300 cc. were given. The whole plan of treatment used was supportive in nature. One striking point, on later observation, was the marked exacerbation of the symptoms that paralleled the decrease in urinary output and the recovery that ensued when his urinary output per twenty-four hours increased. Table 1 shows this point more clearly. It will be observed that on February 6, 1938, the blood creatinine was 2.9 per cent and twenty-four hour urine output 750 cc. Tracing these readings it will be seen that as the urinary output decreased the figures for creatinine progressively increased until on February 16, 1938, the twenty-four hour output was 400 cc. and the value for creatinine 15 mgm. per 100 cc. Striking clinical improvement attended the increase in urinary output which, when it did come, increased rapidly. Accompanying this was a rapid decrease in edema, clearing of the mental condition and ability to take and retain food.

Table 1. *Case 1*

Date	Urea	N.P.N.	Creatinine	Urine O.P.
2-4-38	43.42	60	2.4	700 cc.
2-6-38	44.7	65	2.9	750 cc.
2-8-38	59.5	97.3	8.0	600 cc.
2-10-38	73.5	143	10.5	450 cc.
2-12-38	86.86	140	13.0	460 cc.
2-14-38	112.08	158	14.0	400 cc.
2-16-38	111.37	147	15.0	1000 cc.
2-17-38	119.08	163	14.2	750 cc.
2-19-38	110.68	150	13.0	2900 cc.
2-21-38	99.46	110	10.0	5050 cc.
3-1-38	69.27	101.6	8.0	1525 cc.
3-9-38	21.6	48.6	1.9	4800 cc.

On March 10, 1938, he was sufficiently improved to be dismissed to the home of a relative in the city and kept in bed there another thirty days. At the end of that time the blood pressure had returned to normal but a trace of albumen and several red blood cells were present in the urine although he felt perfectly well and refused further treatment. Following this I lost track of this boy until December 1943 when he appeared at my office in military uniform. A routine check of the urine revealed no abnormalities and physical examination was essentially normal. Since then I am informed he has been sent overseas with the armed forces.

Case 2. E. S., female, aged 12 years, ten days prior to her present illness had had what was thought to be a mild case of scarlet fever. Four or five days previous to the onset of convulsions her parents noticed that she was more or less drowsy, with occasional headaches and was unable to do her usual work. This continued until the afternoon of the tenth day when she refused to eat her dinner, felt drowsy and was put to bed and shortly thereafter had a convulsion which lasted three or four minutes with complete loss of consciousness.

At the time the patient was seen she was semiconscious and extremely irritable. Reflexes were all hyperactive. Her pupils were widely dilated, vision blurred, breathing stertorous, blood pressure 175/120, pulse rapid, full and bounding. A catheterized specimen of urine revealed 10 cc. of a highly colored urine, specific gravity 1030, albumen 3 plus, sugar negative, and microscopic examination showed a field loaded with red blood cells. The patient was given morphine grains

1/6 and atropine sulphate grains 1/150 by hypodermic, ethyle chloride inhalation and 150 cc. of blood was removed by venous puncture from the right median basilic vein. Warm moist packs were applied to the entire body and a 1 per cent solution of Mg So_4 was given intravenously. Later gastric lavage was done and 1½ ozs. of Mg So_4 was given through the stomach tube. The convulsions recurred every fifteen or twenty minutes until about 12 p.m. when they became shorter, less severe and farther apart. The last seizure occurred at 5 p.m. the next day and lasted a few seconds. The blood pressure returned to 125/100 in two or three days. The urine continued to show red cells for a number of weeks. The patient was cared for in the home and no blood chemistry was done. However the phenolsulfonphthalein test was normal on several occasions later.

DISCUSSION

The story of acute nephritis with its attendant edema and bloody urine following an acute tonsillitis or scarlet fever is an old one. It is well known that the tendency is for recovery from an acute attack, especially in young people, a certain percentage of whom either recover entirely, become latent with progression years later to chronic nephritis or proceed directly to a chronic state following the acute illness. I have no doubt that repeated careful urinary examinations might show the presence of abnormal constituents even at this date. The high values for blood creatinine with apparent rerecovery were one feature I had not seen before and I was prompted to seek more information on this problem. In personal communication with Dr. Francis Blake, of New Haven, Conn., and Dr. Henry Christian,[1] of Boston, Mass., the responses were quite similar. It was confirmed by both men that this occurrence was quite rare but cases were cited with recovery in which the creatinine reached even higher figures than in my cases.

Because of the great variability in severity in individual cases of acute nephritis it is sometimes impossible to date the origin of the disease. Frequently, on exploring the history in a patient whose urine shows red blood cells and albumen it is impossible to elicit any date of origin or acute infections that may have been antecedent. An interesting study and follow up has been made by Murphy and Peters.[2] They report a group of two hundred and five patients followed from two to ten years in which 43.5 per cent of the entire group showed latent or chronic nephritis at the end of the ten year period. Such a figure as this makes one more cautious in stating the prognosis to his patient.

Of recent years the blood sedimentation rate has come into more frequent use in an attempt to determine whether the disease is sufficiently quiescent to allow the patient up and about the ward or to leave the hospital. This remains a difficult problem and, in view of the high incidence of a resultant latent or chronic nephritis, an important one. A résumé of the comparative values of routine urinalysis, Addis counts and blood sedimentation rates as criteria of activity in glomerular nephritis is summarized by Rubin, Rapoport and Walz[3] who say: "There is a close correlation between the return of the blood sedimentation rate to normal and recovery from acute glomerular nephritis. There is also a correlation between the return of the sedimentation rate to normal and the normal Addis count, the Addis count becoming normal about five weeks following the sedimentation rate. In those instances where there has been great disparity between the return of the sedimentation rate to normal and the Addis count, the sedimentation rate has been an equally if not surer index in our experience. However of greater prognostic significance is the return of both values to persistently normal levels for a period of several weeks." In recent years various ones of the sulfa compounds have been used in treatment without any specific therapeutic agent gaining predominance.

SUMMARY

1. Two cases of severe acute glomerular nephritis have been presented in one of which the blood creatinine reached an extremely high figure and the patient went on to clinical recovery and the other had a similarly stormy course and also recovered. The weight of evidence is in favor of these people becoming so-called latent cases.

2. A brief discussion of the prognosis in acute nephritis is presented.

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UNIVERSITY OF MICHIGAN OFFERS RESIDENCIES IN GENERAL PRACTICE

More general practitioners to care for the needs of rural areas in Michigen is the goal of an experimental two-year residency program being inaugurated by the University of Michigan Medical School this summer.

Writing in the July 10 issue of *The Journal of the American Medical Association*, Charles F. Wilkinson, M.D., of the University of Michigan Medical School, Ann Arbor, says that the program has the approval of the Council on Medical Education and Hospitals of the American Medical Association and of the Michigan State Board of Registration in Medicine.

The first year of the program will consist of six months of internal medicine, dermatology and surgery, and six months on medical and surgical services, to include obstetrics, psychiatry, neurology, dermatology, other nonoperative specialties and all the operative specialties.

The second year will be spent on obstetrics and gynecology, neuropsychiatry, pediatrics and medical and surgical services, "with a possible third year."

"Many areas in Michigan were not being covered by doctors and in some cases, large numbers of people have no medical care or else have been subjected to the care of an osteopath. In many areas, older physicians are retiring and no younger men are coming to take over the practice of these elder physicians," Dr. Wilkinson points out.



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PRESIDENT'S PAGE

The Annual Conference of Presidents and Officers of State Medical Associations took place in Chicago on June 20. The meeting was attended by approximately 200 persons including myself and others from Missouri.



Paul R. Hawley, M.D., Chief Executive Officer, Blue Cross-Blue Shield Commissions, former director of the medical care division of the Veterans Administration, delivered a strong plea for a National Service Agency to handle the enrollment of large national organizations. He stated that these organizations, such as General Motors and United States Steel, desired an agreement for their workers for hospitalization and medical care which would be standard throughout the country. He further stated that the various unions are making arrangements for such a plan in their wage negotiations with management. The National Service Agency would be operated and managed by the joint action of all of the Blue Shield-Blue Cross plans involved and would work as a service arm only. Policy would be determined by the individual plans.

At present there are some eighty-seven individual Blue Cross plans and more than fifty Blue Shield plans in existence. Each of them is managed at the local level by committees of physicians, hospital personnel and the public at large. The benefits offered and the subscription rates charged by these plans vary considerably due to local conditions.

It is Dr. Hawley's opinion that it is imperative that the National Service Agency be placed in operation before the end of 1949. Otherwise, he believes compulsory health insurance is a foregone conclusion.

Robert Mueller M.D.

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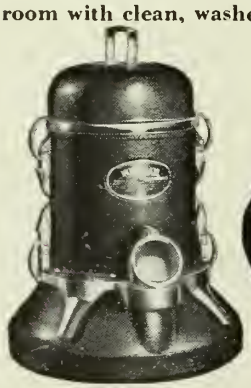
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AUGUST, 1948

EDITORIALS

AMERICAN MEDICAL ASSOCIATION OFFICERS

Officers elected by the House of Delegates of the American Medical Association are: President-Elect, Ernest Edward Irons, M.D., Chicago; Vice President, Roy W. Fouts, M.D., Omaha; Secretary, George F. Lull, M.D., Chicago; Treasurer, Josiah J. Moore, M.D., Chicago; Speaker, Francis F. Borzell, M.D., Philadelphia; Vice Speaker, James R. Reuling, M.D., Bayside, New York; Trustees, Gunnar Gundersen, M.D., La Crosse, Wisconsin (1953), Edward S. Hamilton, M.D., Kankakee, Illinois (1953), and Walter B. Martin, M.D., Norfolk, Virginia (1951); Judicial Council, John H. O'Shea, M.D., Spokane, Washington; Council on Scientific Assembly, Alphonse McMahon, M.D., St. Louis; Council on Medical Education and Hospitals, Harvey B. Stone, M.D., Baltimore, and William L. Pressley, M.D., Due West, South Carolina; Council on Medical Service, Henry B. Mulholland, M.D., Charlottesville, Virginia, and Joseph D. McCarthy, M.D., Omaha.

R. L. Sensenich, M.D., South Bend, Indiana, was installed as President.

The next Annual Session will take place in Atlantic City.

The Interim Session of the American Medical Association will convene in St. Louis, November 30 to December 3, 1948.

CAVEAT EMPTOR

"Shakespeare never repeats" probably is as well known a saying as "caveat emptor." No attempt is being made to refute the statement other than to suggest that some things are worthy of repetition, especially when they relate to the buyer.

Recently several incidents concerning the purchase of insurance have occurred. The following suggestions to the buyer would seem to be in order:

(1) Demand time to read the insurance policy before buying.

(2) Read and understand the coverage.

(3) Be sure to read page 3 carefully, several times, especially that section which tells what one does not get (commonly called exclusions).

(4) If not acquainted with the company, get a report first from the Association as to whether the company is licensed, how long it has been operating, what percentage of premiums are used in paying claims and such information.

(5) Caveat emptor.

"SLUDGE"

In a recent copy of a nationally circulated magazine appeared an article with striking and excellent color photographs on the topic "Sludge."

The inference, after reading this article, was that something importantly new has been discovered which gave great promise of revolutionary changes in diagnosis and treatment of the "shock" patient.

It is obvious that an article, to be successful, must pique the reader interest and stimulate whatever imagination he possesses. This is necessary if a large volume circulation is to be maintained. Furthermore, if the subject is presented in a particularly intriguing manner, rather complex, physiochemical phenomena may be explained so that the reader remembers at least a small part of the facts and grasps some of their implications. Thus, a truly worthwhile, public educational feat has been accomplished, and pleasantly.

To physicians, the dread clinical picture of the shock patient is always most unwelcome. No matter what phase of medical practice engages the attention of a physician, he is likely to be confronted with a patient who is in shock.

In the article mentioned, there is no quibble with the accuracy of the presentation, nor are the facts questioned. And any explanation — whether in formal, medical textbooks or in a widely read, lay magazine—which helps explain and clarify shock, is worthy of note.

The article did not mention, however, certain phases of shock. It presented, rather, the single, discrete objective sign: "sludge," in the beautiful, colored photomicrographs. Scant attention was given to the constriction of the capillaries which precedes "sludge." This, in the opinion of many investigators, is the truly baffling phase of shock, with "sludge" merely an attending ultimate result thereof.

It is interesting in any discussion of shock to remember that "shock" is not a new word. Henri Francois LeDran, in 1743, used this word. He described the capillaries "to be choked up" in shock —he knew about "sludge." And, best of all, he left documentary proof of his observation. Capillary constriction which precedes "sludge" was observed in 1733 by Stephan Hales, an English minister.

Therefore, while the ingenuity of the authors is to be congratulated in presenting this subject so admirably, giving the mind an image to grasp, one must protest any claims of newness—either of discovery or description. Moreover, one must question the extent of benefit which medical science

will derive from this latest, most spectacular presentation which ostensibly was to unravel the mysteries of an age old problem, "sludge."

HEART DISEASE

There is small reason to believe that medical science may be on the brink of any quick or startling solution to the problem of heart disease, according to Francis R. Dieuaide, M.D., scientific director of the Life Insurance Medical Research Fund. Writing in the Fund's annual report released June 30, Dr. Dieuaide declares that more than 45 per cent of all deaths in the United States are caused by heart disease and that as time goes on this percentage will increase unless entirely new and effective means of prevention or cure are found and applied.

The 1947 report of the Fund is not gloomy reading for either doctor or layman, however. Dr. Dieuaide reports fundamental research projects now going on in dozens of hospitals and medical schools in the United States and Canada, projects which bit by bit are increasing knowledge of how the heart and arteries work in health and what happens to them when illness occurs. The problems to be solved before diseases of the heart and arteries can be controlled require an immense amount of research, but this research in America is being carried on by organizations like the Life Insurance Medical Research Fund, the American Heart Association and similar groups.

Supported solely by United States and Canadian life insurance companies, the Life Insurance Fund last year contributed more than 5 per cent of all outside support which went to medical schools for fundamental research of all kinds. All of the Fund's money was earmarked for research in the cardiovascular diseases. Until the Fund was organized in December 1945, the money spent for research in heart disease was grossly inadequate both in relation to the need and in relation to money made available for the study of other diseases such as infectious diseases, cancer or diseases of nutrition and metabolism.

The solution of the problem of heart disease is not a matter of money alone however, as Dr. Dieuaide reports. Above all else, able workers and new ideas are the prime necessities. The Life Insurance Fund thus spends some 10 per cent of its funds in establishing medical fellowships for trained scientists and also for young men and women now in medical schools. In all, the Fund has given about two hundred thousand dollars for these fellowships and over a million and half dollars for specific research projects.

The research currently being supported by the Life Insurance Medical Research Fund can be described under five headings, excepting certain specialized programs:

(1) Studies of the chemical processes which constitute the life of cells composing the heart and blood vessels. Such work bears directly on the effects of various diets, hormones and drugs and on the development of aging and degeneration. Projects are in process at Southern California, California, Chicago, Syracuse, Columbia and Harvard universities.

(2) Studies of the flow of blood in the body as a whole and in various organs and of the forces which maintain and regulate the flow. These programs bear on the development of heart failure and on metabolic changes which may be fundamental in the development of high blood pressure and hardening of the arteries. Projects are underway in Pennsylvania, Duke, Emory, Columbia, Harvard, Tulane, Georgia, California, Colorado, Oklahoma, Chicago, Cincinnati, Washington and Western Reserve universities.

(3) Studies of kidney function and the development of high blood pressure. Apart from special forms of high blood pressure, there does not appear to be any good clue to the basic causes of ordinary hypertension; progress has been made in knowledge of the functions of the kidney. A helpful contribution to knowledge of the role of psychologic disturbances in patients has been made at the University of Tennessee. Projects are in process at Tennessee, Johns Hopkins, Yale, McGill, Long Island, Vermont and Duke universities and Mount Sinai Hospital, New York City.

(4) Studies of the development of hardening of the arteries. Much of this research deals with the effects of dietary constituents and particularly with the changes in the body in certain fatty components. The prediction may be ventured that arteriosclerosis develops on the basis of dietary effects or metabolic derangements. Projects are underway at Southern California, California, Saint Louis, Syracuse, Columbia and Alabama universities, and Michael Reese Hospital, Chicago, and Beth Israel Hospital, Boston.

(5) Studies of the causes of rheumatic fever. This work relates principally to the role of streptococcal infections which are commonly believed to be essential elements in the development of rheumatic fever, although adequate proof is not available. If streptococcal infections are the basic cause, so little is known of the connection that no method of prevention can now be devised. Projects in this are being carried on in Utah, Southwestern, Dallas, Johns Hopkins, New York, Yale, Long Island and Harvard universities, and Jewish Hospital, Cincinnati, Children's Hospital, Philadelphia, and the Rockefeller Institute.

NEWS NOTES

Herbert L. Mantz, M.D., Kansas City, was installed as President of the National Tuberculosis Association on June 18 at the closing session of the Association's annual session in New York.

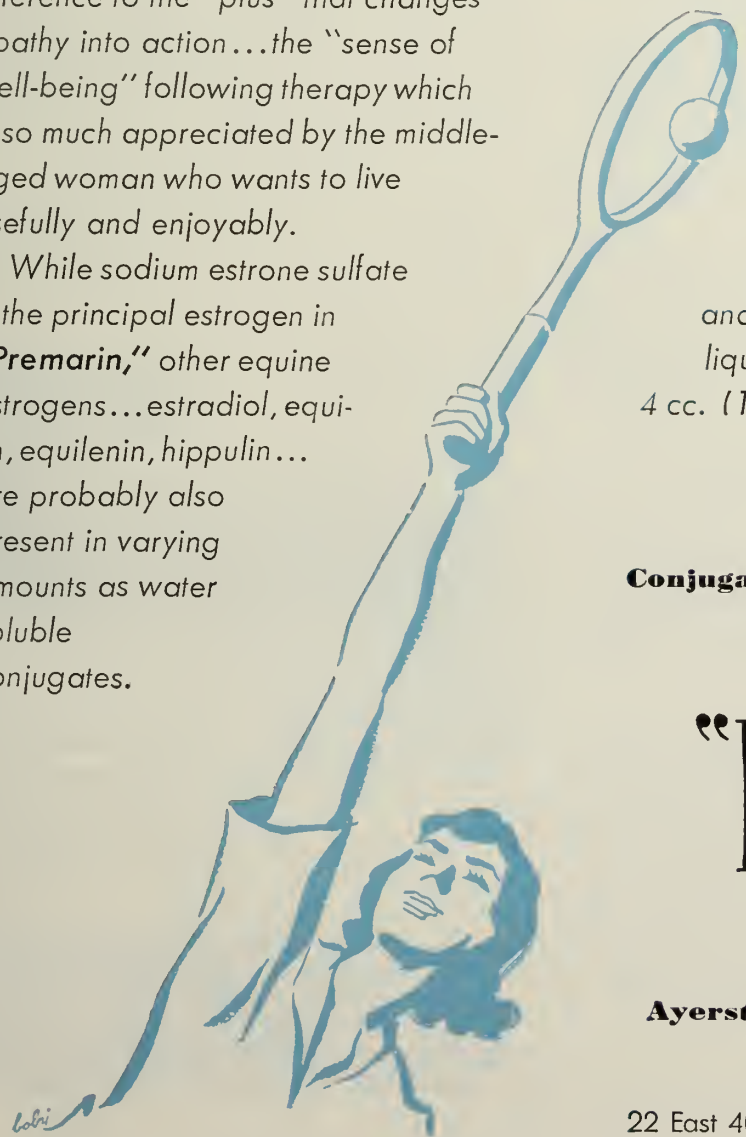
J. Frank Harrison, M.D., Mexico, was one of eight members of the 1898 graduating class of the

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Missouri Medical College who attended a reunion in St. Louis on June 11.

C. Edgar Virden, M.D., Kansas City, recently was chosen chairman of the board of chancellors of the American College of Radiology.

Rex L. Diveley, M.D., Kansas City, conducted a clinic for the Kansas State Crippled Children's Commission at Parsons, Kansas, on June 30.

E. D. Urban, M.D., Sikeston, was elected chairman of the staff executive committee of the Missouri Delta Community Hospital, Sikeston, at a meeting on June 10. Samuel P. Martin, M.D., East Prairie, was elected vice chairman; S. M. Sarno, M.D., Morehouse, secretary, and E. J. Nienstedt, M.D., Sikeston, treasurer.

Irene Keeling, M.D., Kansas City, was a guest speaker at the First Congregational Church, Kansas City, on July 2, and spoke on "Rheumatic Fever."

Robert Elman, M.D., St. Louis, was one of nine physicians who left July 1 for Poland and Finland to establish the first medical training mission under the sponsorship of the Unitarian Service Committee, the United Nations World Health Organization and the Department of State. The group will remain until August 10.

E. Lee Dorsett, M.D., St. Louis, will present a paper before the Honolulu Obstetrical and Gynecological Society, in Honolulu, on August 16, on "Re Operation, Analysis of Some 300 Gynecological Cases." Dr. Dorsett also will attend a meeting of the Pan Pacific Surgical Society.

The City of Nevada voted approval on July 8 of a bond issue of $225,000 for an addition to the Nevada Hospital by a vote of 1,479 for and 274 against. Nevada was designated by the State Hospital Survey Committee as being in need of additional hospital beds. As a result, the community will be eligible to receive federal funds up to one third of the cost of the project.

Ralph R. Coffey, M.D., Kansas City, was a guest lecturer at Purdue University early in July, lecturing each morning before a symposium for teachers in the Purdue Work Shop on the subject "Physical Aspects in the Development of the Child and Adult."

F. Garrett Pipkin, M.D., Kansas City, was awarded a certificate of merit at the Chicago Session of the American Medical Association for his exhibit on "Indefinite Knee Symptoms Resembling Injured Cartilages."

Trawick Hamilton Stubbs, M.D., of Emory University School of Medicine, will become dean of the University of Missouri School of Medicine when Dudley S. Conley, M.D., Columbia, retires in September.

The Southern Medical Association has announced its annual meeting will be held in Miami, Florida, from October 25 to 28.

Doyle C. McCraw, M.D., mayor of Bolivar, was one of those in charge of arrangements for a celebration held in Bolivar on July 5 in honor of the South American patriot, Simon Bolivar. Fifteen thousand persons, including President Harry S. Truman of the United States and President Romulo Gallegos of Venezuela and ambassadors of four South American countries, were in Bolivar to take part in the dedication of a bronze statue of Simon Bolivar. Dr. McCraw presented keys to the city to Presidents Truman and Gallegos. President Truman remarked: "This is a great celebration today. I cannot tell you how pleased I am that so many Missourians and so many of our neighbors turned out. We are celebrating two Independence Days today." It was the 137th anniversary of Venezuelan independence and the 172nd anniversary of the United States independence.

MUSINGS OF THE FIELD SECRETARY

While on a recent trip to Northeast Missouri to attend a medical meeting, it was a pleasure to drop in on Dr. J. R. Bridges, Kahoka, for a short visit. His record runs something like this; he began the practice of medicine in Kahoka on April 30, 1888, and has been so busy treating the sick since then that he has not had time to look for other locations so has just continued practicing in Kahoka for the last 60 years and is still going strong. Maybe the country is a healthy place to practice medicine after all.

A large number of medical meetings, county, joining county and district meetings have been held over the state since the Association's Annual Session in March. One of these has developed into an annual affair; Dr. Homer Kerr, Crane, invites his five county hyphenated society to meet in his home town each spring. This meeting begins with a dinner of chicken, hot rolls and fresh strawberry shortcake. All who attend this feast are guests of Dr. Kerr. So that it is not all physical satisfaction, a regular society program follows the dinner. One has to attend this affair to appreciate fully its significance. One also can feel safe in betting that the attendance at this meeting will rank as the societies No. 1 of the year. It seems there are ways of coaxing doctors to attend medical meetings.

Dr. William H. Breuer, St. James (who since the meeting died on July 16, 1948), and Dr. J. E. Mitchell, Sedalia, were honored recently by their respective county societies for fifty years in the

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From where I sit *by* Joe Marsh

Jeb Had the Folks in Stitches!

At the Friday Night Social, Jeb Crowell had the whole audience in stitches—doing a take-off on the blustering cocksure character who belittles everybody and everything that isn't from his own home town.

Well, we can laugh at that sort of character because from where I sit, Americans are just the opposite. We like to boast a bit perhaps, about the paint job on the new barn, or the missus' style of cooking—but we aren't intolerant of people who don't think or act the same way we do.

In our town, for instance: Some folks like band concerts, others don't —some families serve beer with dinner; others, buttermilk. As for politics, there's plenty of healthy disagreement.

But when it comes to denying folks the *right* to think or act as they choose . . . no, we're simply like you—we don't believe in it, whether it goes for serving beer, or speaking one's mind on public affairs.

Joe Marsh

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practice of medicine. Testimonial dinner meetings were held for these two beloved physicians who have contributed so much to the welfare of their communities as well as to that of their profession. The country doctor, supposed to have disappeared with the horse and buggy, is exemplified by the four physicians mentioned in this column and by many others in this state too numerous to mention.

DEATHS

Rauschelbach, Oscar R., M.D., Rhineland, a graduate of Kentucky School of Medicine, Louisville, 1896; honor member of the Montgomery County Medical Society; aged 81; died May 17.

Dalton, Michael Henry, M.D., St. Louis, a graduate of the College of Physicians and Surgeons, Boston, 1898; honor member of the St. Louis Medical Society; aged 80; died May 31.

LeMone, David V., M.D., Columbia, a graduate of Washington University School of Medicine, 1934; Fellow of the American Medical Association; member of the Boone County Medical Society; aged 44; died June 11.

Wood, Vivean Visscher, M.D., St. Louis, a graduate of Washington University School of Medicine, 1912; Fellow of the American Medical Association; member of the St. Louis Medical Society; aged 62; died June 20.

MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for August and September, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

August 4: Skin.
August 6: Gynecology and Genitourinary.
August 11: Skin.
August 13: Breast.
August 18: Gastrointestinal.
August 20: Cervix.
August 25: Skin.
August 27: Head and Neck.
September 1: Skin.
September 3: Gynecology and Genitourinary.
September 8: Skin.
September 10: Breast.
September 15: Gastrointestinal.
September 17: Cervix.
September 22: Skin.
September 24: Head and Neck.
September 29: Skin.

SYPHILIS RECORDS

The Veterans Administration has announced that it has in its custody the majority of syphilis records of Army personnel who were treated while in active service, and in many instances, can procure informative data from the syphilis records of other than Army personnel. It is thought that many physicians treating veterans for syphilis as private patients would find a résumé of the syphilis record useful since the details of treatment, results of spinal fluid examinations and blood serologies are incorporated in the records.

Résumés of these records are available to physicians who are treating such veterans provided authorization for the release of the data is given by the veteran. Requests for the résumés accompanied by an authorization for the release of the data, dated and signed by the veteran, should be addressed to the Dermatology and Syphilology Section, Veterans Administration, Munitions Building, Washington 25, D. C. It is important that the veteran's service serial number and other identifying information, such as the date of enlistment, the date of discharge, rank and organization be included.

Ordinarily the résumés can be furnished in approximately two weeks from the date of the receipt of the request and signed authorization.

SOCIETY PROCEEDINGS

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

North Central Counties Medical Society

The North Central Counties Medical Society met at Lancaster on July 1 at the Methodist Church at 7:00 p. m. The meeting was in honor of Ida M. Nulton, M.D., who has completed fifty years of practice in Missouri.

Following dinner, pictures were taken of those present by George Grim, M.D., Kirksville.

W. F. Francka, M.D., Hannibal, Councilor, spoke briefly.

H. L. Greene, M.D., Hannibal, discussed "Epigastric Pain."

D. F. Landau, M.D., Hannibal, talked on "Infant Feeding."

J. S. Gashwiler, M.D., Novinger, presented a present to Dr. Nulton as a token of respect. Dr. Nulton thanked the Society for the honor, respect and consideration shown.

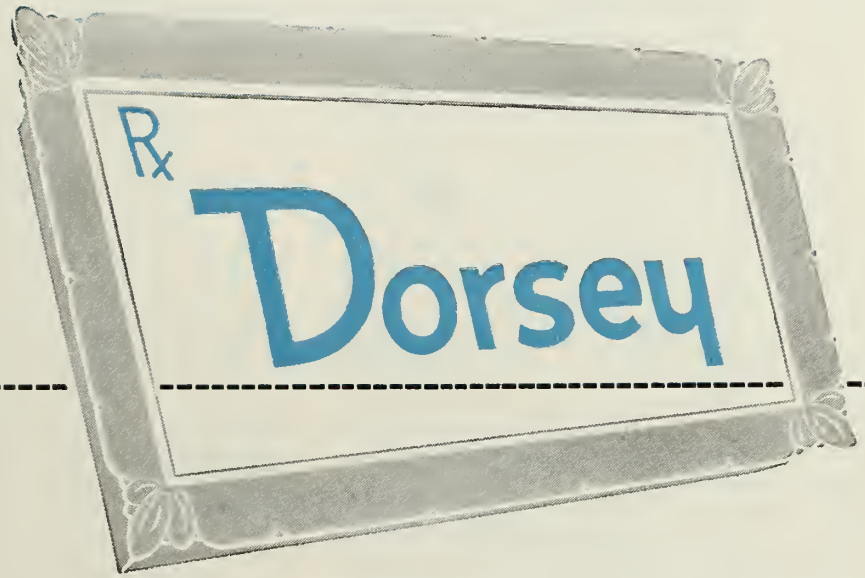
J. H. Holman, M.D., Unionville, offered a resolution of commendation of Dr. Nulton's outstanding service to the community and ethical medicine in her fifty years of practice. The resolution was approved and ordered spread on the minutes of the Society and a copy sent to the Missouri State Medical Association. The resolution follows:

Whereas, A member of the North Central Counties Medical Society has for half a century ignored selfish desires and personal gain to unstintedly give of her time, her vitality, her energies and her priceless professional skill to rich and poor alike who suffered from the merciless ravages of disease, and who has thus faithfully upheld the highest ideals and noblest traditions of medicine. Be it

Resolved, That we unreservedly commend a life so o'erfilled with usefulness, a life that sought not popular acclaim but that was imbued with human kindness and enriched by deeds most worthwhile, a life so endeared to the hearts of the multitude of those whose suffering has been assuaged by the touch of her magic hand in some dark hour of direct need as to be beyond adequate reward, save by the happy remembrance of having ever given her best for the good of others; be it further

Resolved, That this resolution be made a part of the minutes of this meeting to commemorate the respect

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and esteem in which the subject, Ida M. Nulton, M.D., is held by the members of this Society.

The following were present: Drs. George E. Grim, R. O. Stickler, Kip R. Hudson, Ralf Hanks, Col. Mittenburger, Clifford Henery, J. J. Wimp, Milton T. English, Kirksville; J. H. Holman, E. A. Montgomery, Unionville; Walter Herington, Green City; Henry E. Gerwig, Lancaster; W. F. Francka, H. L. Greene, D. F. Landau, Hannibal; J. S. Gashwiler, Novinger, and Mr. Raymond McIntyre, St. Louis.

J. S. Gashwiler, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central Counties Medical Society

The South Central Counties Medical Society met for dinner at the Antlers Cafe, Mountain Grove, on June 18, with the following members and visitors present: Drs. J. R. Mott, Hartville; J. A. Fuson, Mansfield; R. W. Denney, A. C. Ames and R. A. Ryan, Mountain Grove; Garrett Hogg, Jr., Cabool; Leslie Randall, Licking; C. F. Callihan, Willow Springs; E. C. Bohrer and Rollin Smith, West Plains; E. B. Hanan and J. N. Dill, Springfield.

Following dinner the meeting adjourned to the home of Dr. Denney and Dr. Callihan, the president, called the meeting to order.

Dr. Hanan gave a thorough discussion on the subject, "Blood Types" and especially stressed the Rh factor.

Dr. Dill spoke on "Managing Fresh Wounds of Violence." Wayne Perry of the Mountain Grove High School showed an interesting film on the same subject, loaned by Baur & Black, Chicago.

A vote of thanks was given the speakers and the meeting adjourned to meet in Cabool on July 16.

A. C. Ames, M.D., Secretary.

TENTH COUNCILOR DISTRICT

FRANK W. HALL, CAPE GIRARDEAU, COUNCILOR

Scott County Medical Society

Forty-two physicians attended a joint dinner meeting of the medical societies of the Tenth Councilor District at the Country Club, Sikeston, May 12. The host society, the Scott County Medical Society, arranged a social hour preceding the dinner.

Robert Mueller, M.D., St. Louis, President of the Association, spoke on "A Challenge to Medicine."

E. A. Smolik, M.D., discussed "The Management of Head Injuries."

E. A. Urban, M.D., Secretary.

Dunklin County Medical Society

The Dunklin County Medical Society served as host at a joint dinner meeting of physicians of ten Southeast Missouri counties at Kennett on June 16. Thirty-nine physicians attended. The meeting was held at the Country Club, beginning with a social hour at 6:00 p. m.

Arthur W. Neilson, M.D., St. Louis, spoke on "Common Skin Diseases and What to Put on Them," illustrating his talk with colored slides.

Mr. T. R. O'Brien, St. Louis, Executive Secretary, Missouri State Medical Association, discussed briefly a few matters pertinent to the activities of the Association.

E. L. Spence, M.D., Secretary.

Pemiscot County Medical Society

The Pemiscot County Medical Society held its annual picnic and fish fry in Northside Park, Hayti, on June 3, with the Woman's Auxiliary making the preparations. The following physicians and their wives were present: O. W. Cook, J. B. Luten, Philip Aquino, S. B. Beecher, Caruthersville; R. J. Chapman, E. L. Taylor, Steele; L. E. Cooper, Cooter; W. R. Limbaugh, J. H. Roberson, A. G. Shirey, Hayti.

J. H. Roberson, M.D., Acting Secretary.

BOOK REVIEW

New and Nonofficial Remedies, 1947. Containing Descriptions of the Articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1947. Issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. J. B. Lippincott Company. Philadelphia, London, Montreal. 1947. Price $3.00.

Although the latest edition of *New and Nonofficial Remedies* has some eleven pages fewer than the 1946 book, its increase in size, due to the heavier paper used, and its change of color—dark green to bright red—combine to make a striking contrast with the earlier annual volumes. The book is now published by J. B. Lippincott and Company, though it is still issued under the direction and supervision of the Council on Pharmacy and Chemistry. Another innovation is the relegation of the statements of tests and standards to the back of the book, which makes the text more convenient and useable for the physician, for whom it is primarily intended. It is understood that supplements to the annual volumes will no longer be issued. The physician who is interested in current acceptances can keep track of these as the descriptions are published in the *Journal of the American Medical Association*, or may inquire about them by addressing the Council's office. Several medical and pharmaceutical journals now carry lists of currently accepted products.

There appears to be no very extensive revision in the various general articles or chapter head discussions, although several new monographs have made their appearance and others have been revised to reflect current medical opinion. One notes the appearance of a new chapter, "Unclassified Therapeutic Agents," which includes the monographs on gold compounds and iodine compounds for systemic use. This is in line with the policy adopted some years ago of classifying accepted preparations according to pharmacologic action and therapeutic use.

Attention is called to the amplification and indexing of the section devoted to the statement of the Council's Rules. This should be of great assistance to manufacturers in the presentation of products for Council consideration and is no doubt inspired by the recent marked increase in the number of pharmaceutical concerns asking Council recognition.

The descriptions of some thirteen new preparations appear in this volume. This excludes, of course, brands or dosages of already accepted agents.

"New and Nonofficial Remedies" remains a most valuable and authoritative compendium of modern rational therapeutics. With successive editions, it becomes more useful and accessible to the physician and to all those interested in the use, preparation, or manufacture of drugs.

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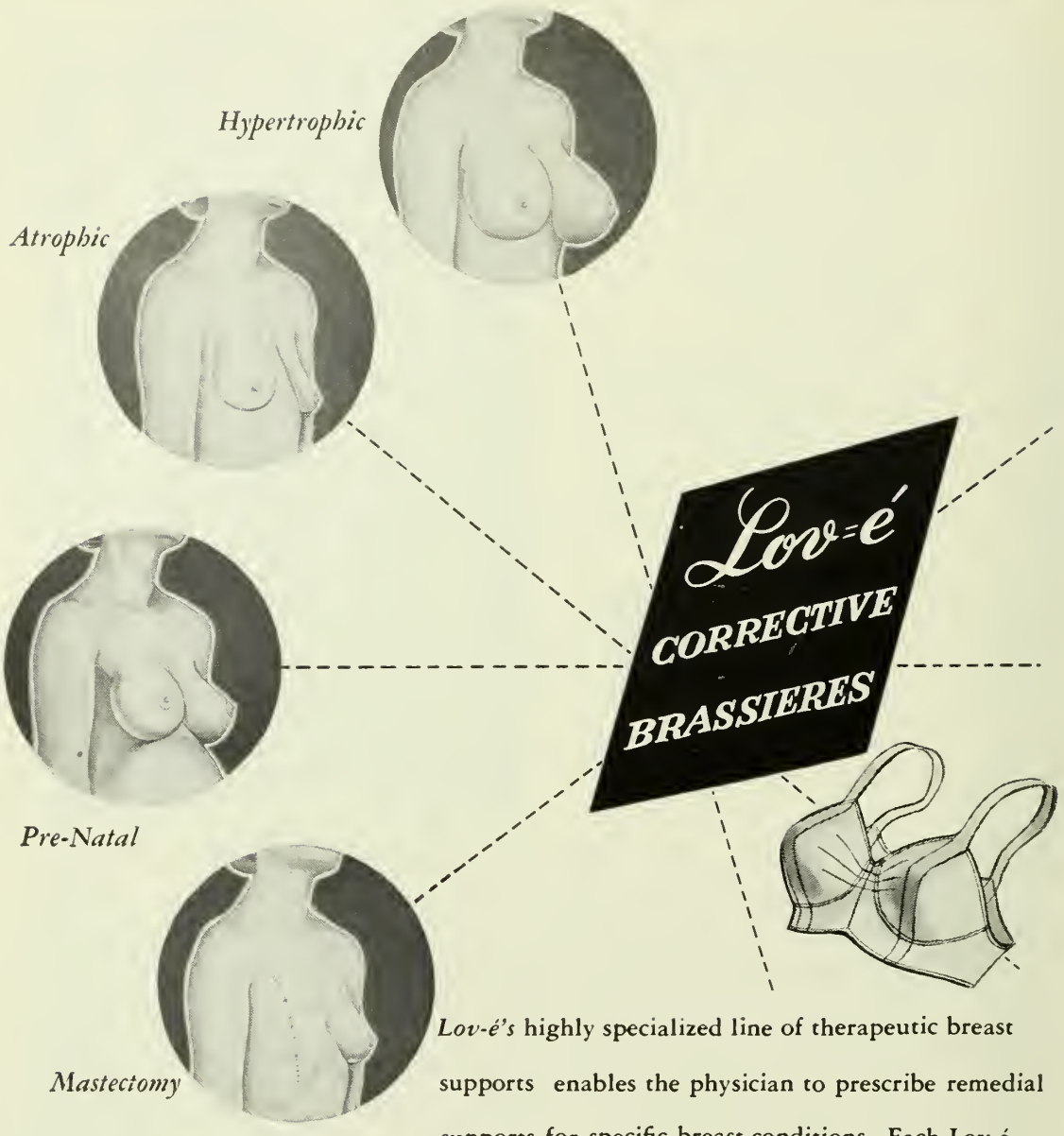
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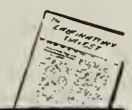
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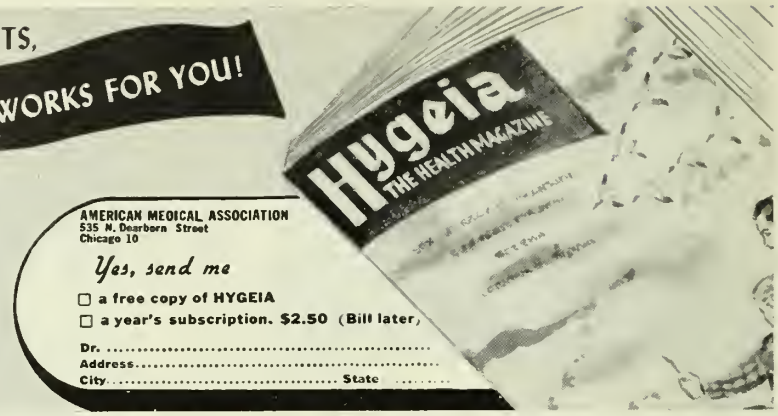
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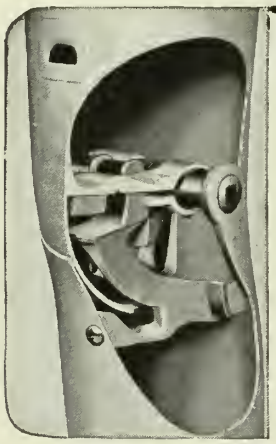
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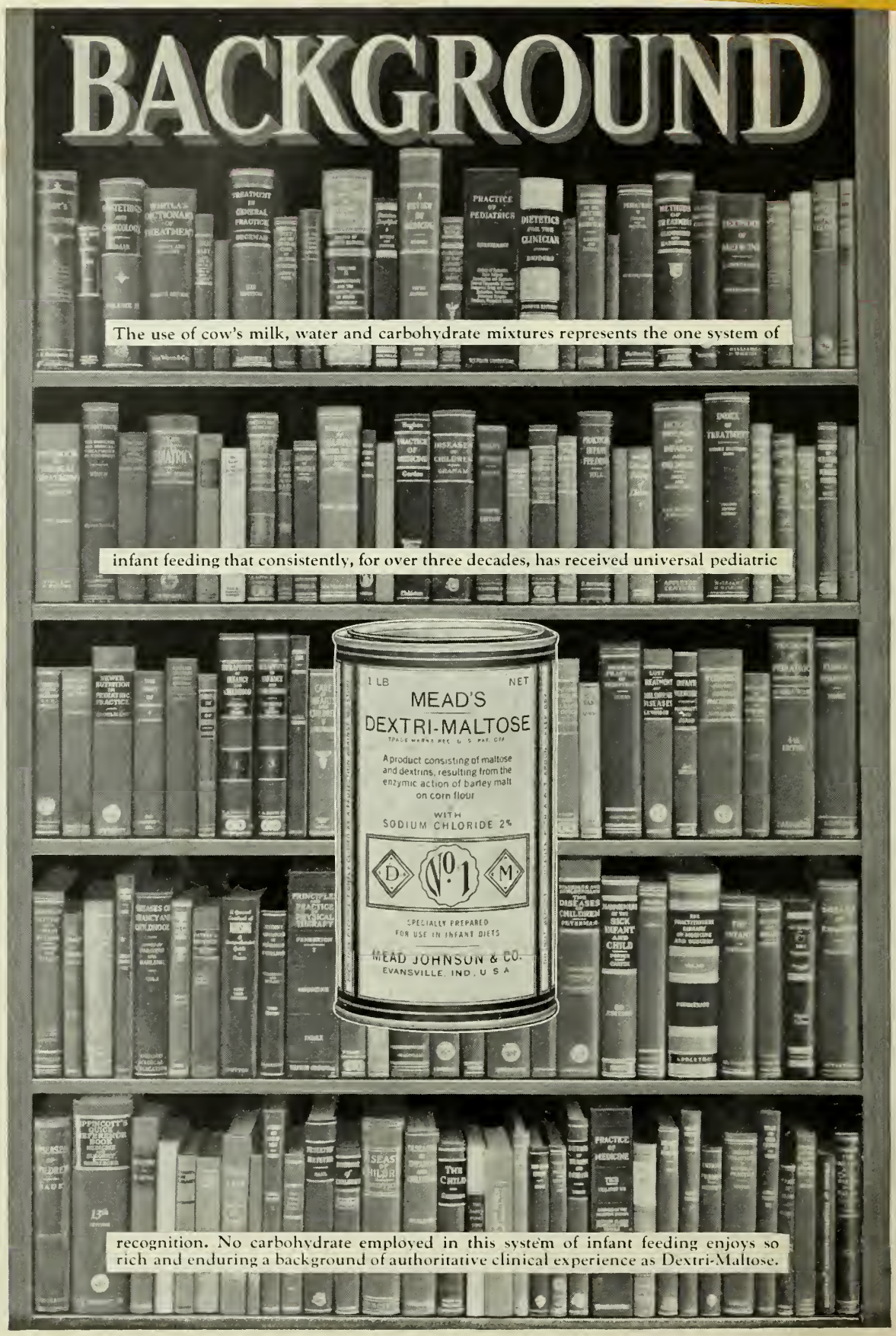
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VOLUME 45
NUMBER 9

SEPTEMBER, 1948

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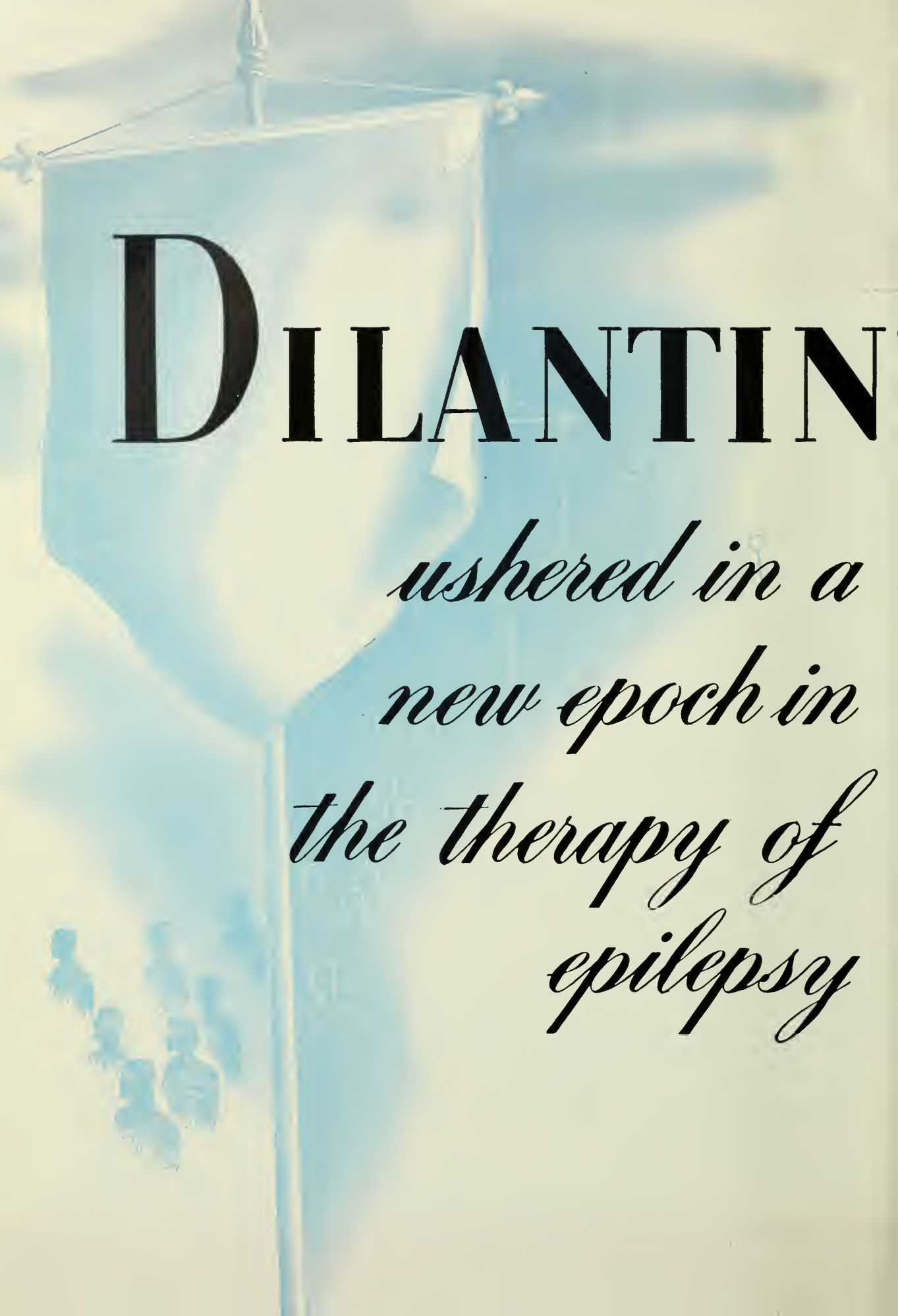
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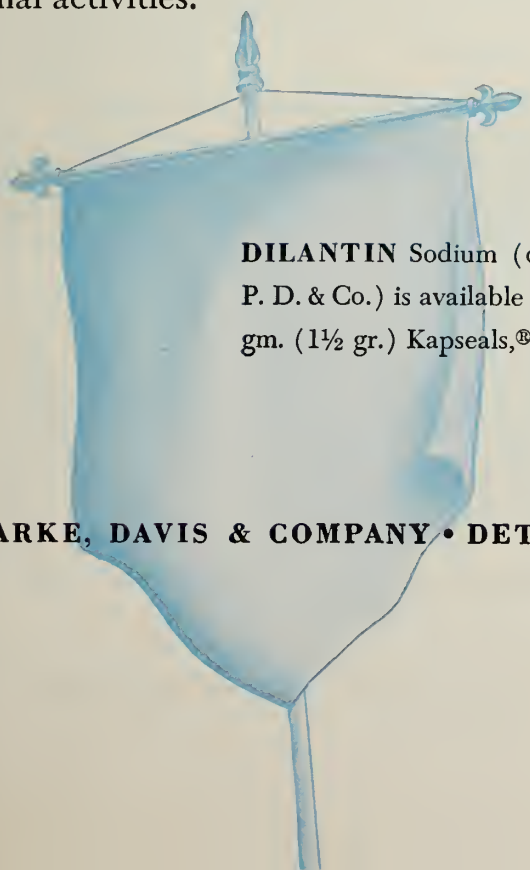
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---

[1] Forbes, E. B., and Swift, R. W.: J. Nutrition 27:453 (June) 1944. [2] Forbes, E. B.; Swift, R. W.; Elliott, R. F., and James, W. H.: J. Nutrition *31*:203;213 (Feb.) 1946.

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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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Bates	6	A. G. Wooldridge	Butler	John M. Cooper	Butler
Benton	6	T. S. Reser	Cole Camp	James A. Logan	Warsaw
Boone	5	James Baker	Columbia	Helen Yeager	Columbia
Buchanan	1	H. E. Petersen	St. Joseph	Joseph L. Fisher	St. Joseph
Butler	10	Fred J. Biggs	Poplar Bluff	Frank E. Dinelli	Poplar Bluff
Caldwell-Livingston	1	Donald M. Dowell	Chillicothe	Joseph E. Gale	Chillicothe
Callaway	5	Henry Durst	Fulton	R. N. Crews	Fulton
Camden	5	E. G. Claiborne	Camdenton	G. T. Myers	Macks Creek
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Carroll	1	W. G. Atwood	Carrollton	John H. Platz	Carrollton
Carter-Shannon	9	F. Hyde	Eminence	W. T. Eudy	Eminence
Cass	6	Herbert A. Tracy	Belton	O. B. Barger	Harrisonville
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Clay	1	A. E. Spelman	Smithville	S. R. McCracken	Excelsior Springs
Clinton	1	S. D. Reynolds	Plattsburg	Wilber G. Spalding	Plattsburg
Cole	5	E. E. Mansur	Jefferson City	Don G. Shull	Jefferson City
Cooper	5	Arie C. Van Ravenswaay	Boonville	J. C. Tincher	Boonville
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De Kalb	1			W. S. Gale	Osborn
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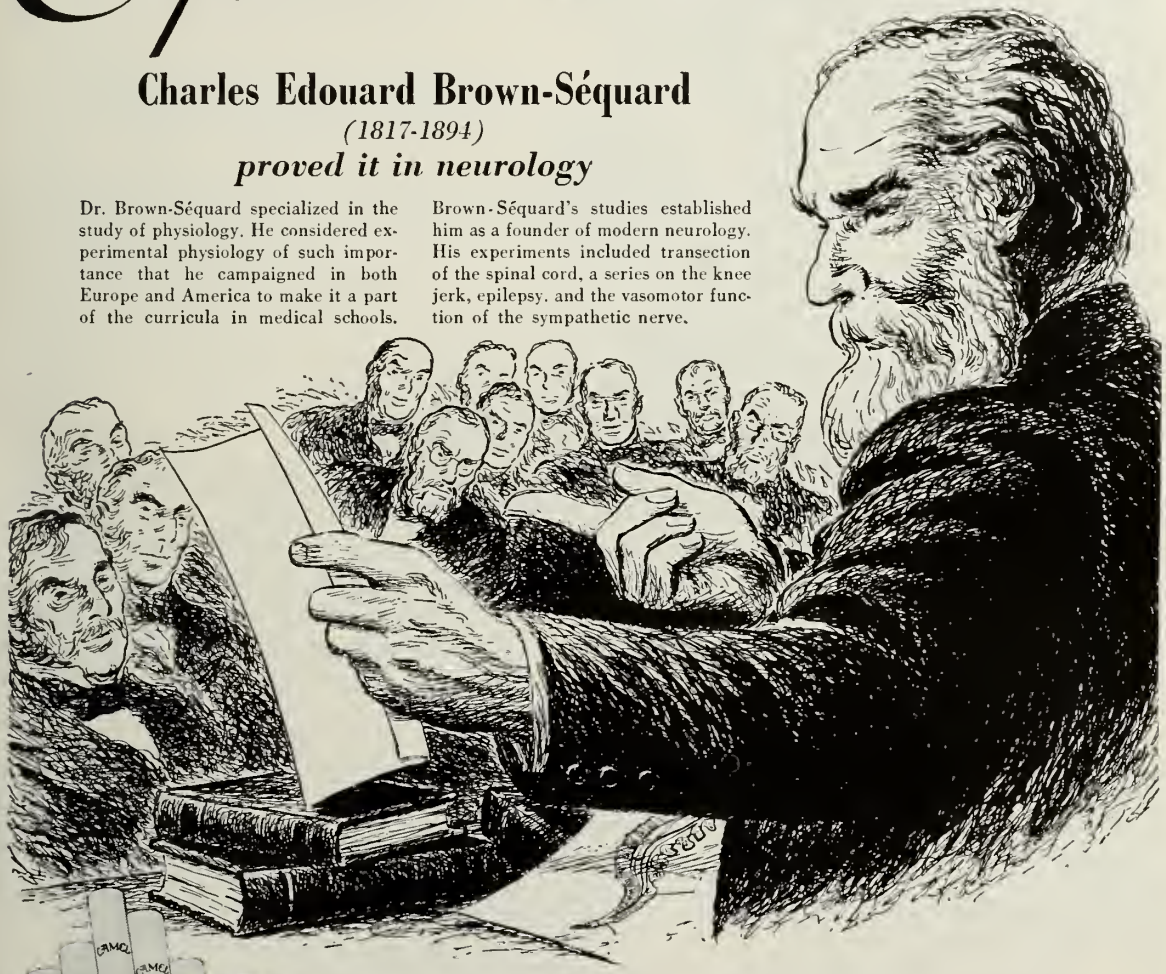
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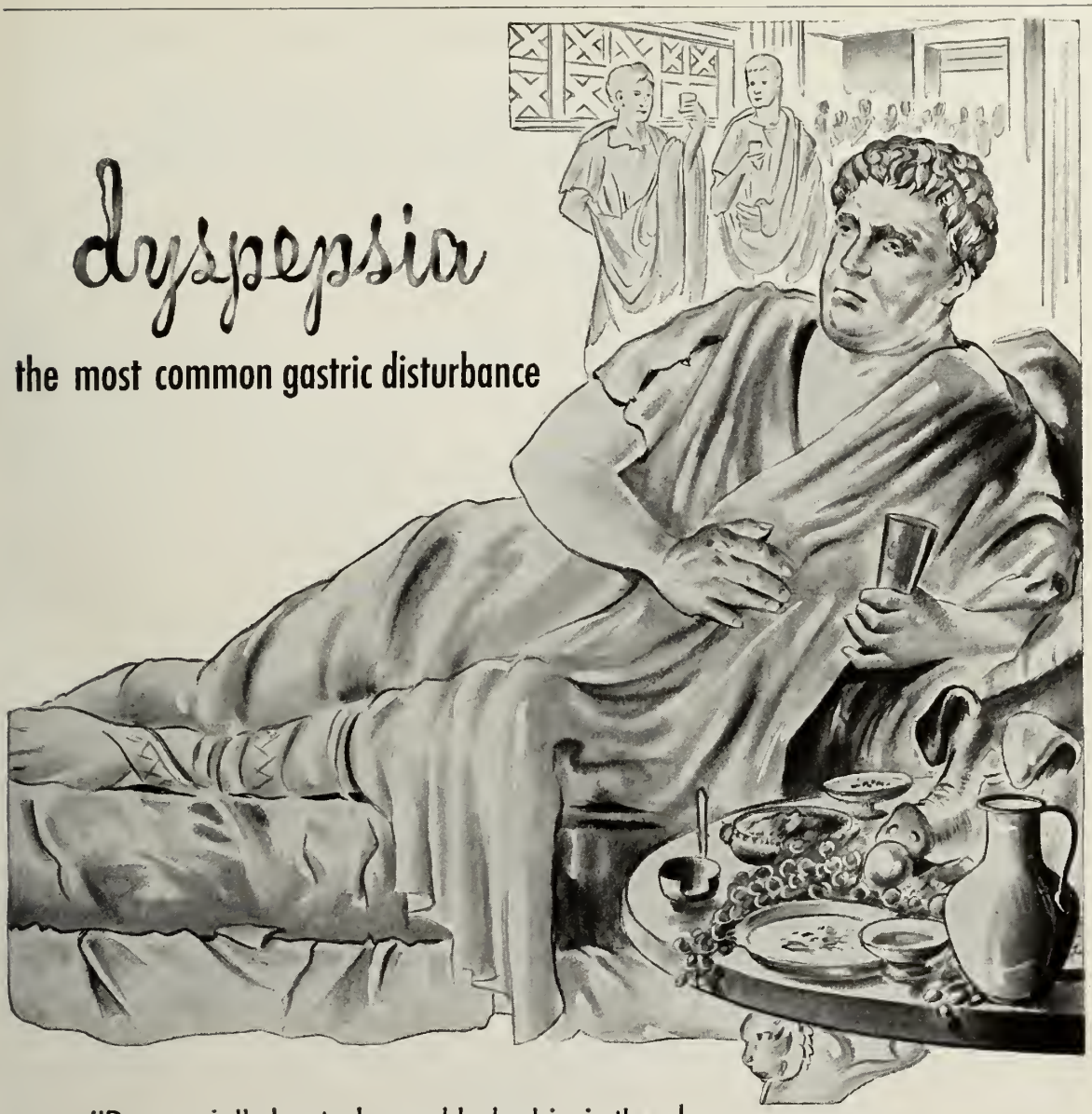
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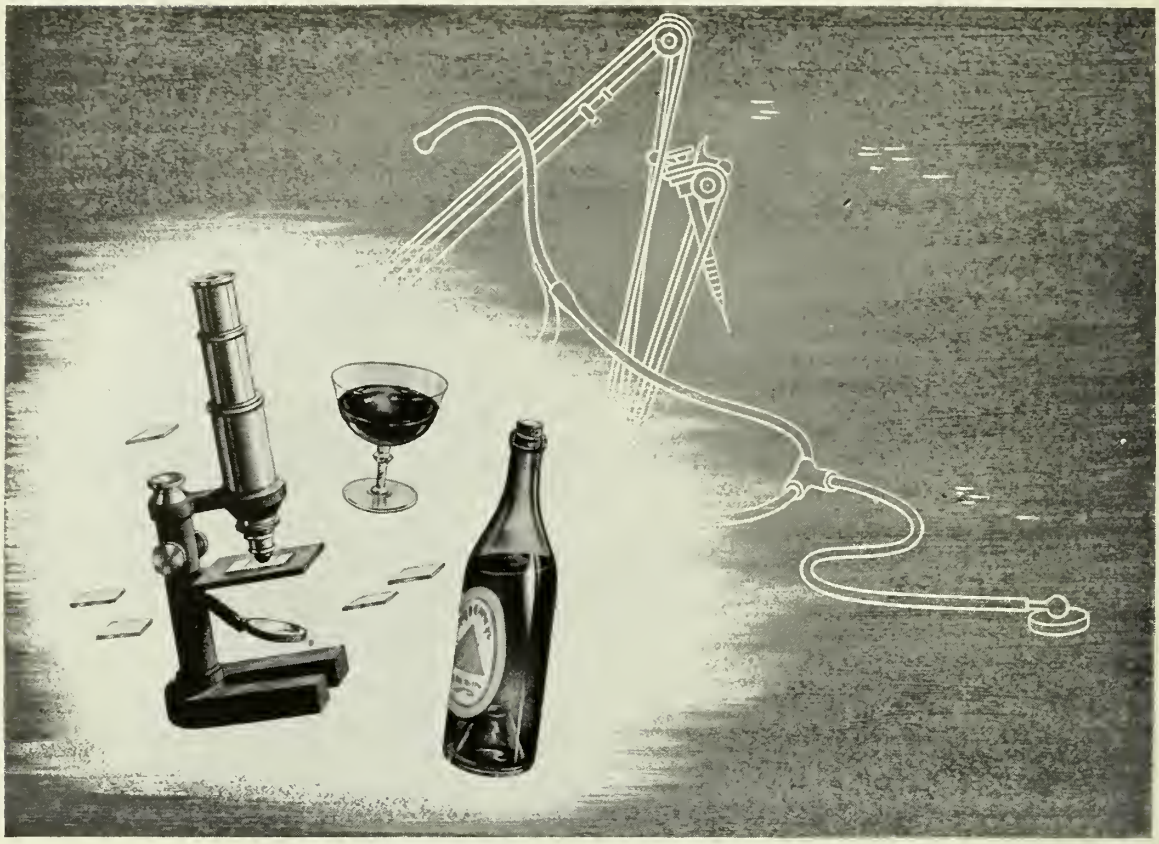


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THE JOURNAL

OF THE

Missouri State Medical Association

The Official Organ of the State Association and Affiliated County Societies
Issued Monthly under direction of the Publication Committee

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VOLUME 45 — SEPTEMBER, 1948 — NUMBER 9

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THE OVERTREATMENT OF ECLAMPSIA

WILLIAM F. MENGERT, M.D., *Dallas, Texas*

AND

RICHARD L. HERMES, M.D., *Dallas, Texas*

SINCE THE ETIOLOGY of eclampsia is unknown, treatment is entirely irrational and empiric. Generally it is active and energetic because the convulsing woman presents such a fearful and pitiful sight every instinct within one cries out to "do something." With the beginnings of modern surgery, delivery was effected immediately by vaginal or abdominal operation because it was recognized that convulsive toxemia was associated only with gestation. Many women died and many years elapsed before it was learned that forcible delivery of the convulsing woman sharply increased the mortality risk. Dieckmann* divides the treatment of eclampsia into six eras.

I. 1745 to 1846. Purge, sweat and bleed. Nonoperative.

II. 1847 to 1895. Purge, sweat, bleed and veratrum viride, or immediate delivery by manual dilation of cervix.

III. 1896 to 1905. Immediate operative delivery by vaginal hysterotomy, or accouchement forcé. (Bossi dilator)

IV. 1906 to 1918. Immediate operative delivery by cesarean section or vaginal hysterotomy. Tweedy (rotunda) elimination and Stroganoff sedation treatment.

V. 1919 to 1927. Medical. Intravenous injections of hypertonic glucose solution, sedation and elimination. Magnesium sulfate.

VI. 1928——. Obstetric (medical and surgical). Intravenous injections of hypertonic glucose solution, sedation, elimination and a selected time and method of delivery.

Maternal mortality rates ranged around 30 to 50 per cent until operative delivery as a method of treatment began to be abandoned.

The trend away from radicalism was brought about by the great human experiment of trial and error. Through bitter experience the accoucheur learned that survival rates improved under conservative treatment. It is the purpose of this paper to suggest that one may, with profit, go even farther along the road of conservatism.

STATISTICS

For orientation, statistics are included regarding the obstetric service (table 1) at Parkland Hospital, and specifically the mortality (table 2) from both convulsive and nonconvulsive toxemia. "Toxemia" is defined for the purposes of this paper in the broad sense, without attempt to subclassify, as

Table 1. *Toxemia Statistics, Parkland Hospital, 1944, 1945, 1946, 1947*

Patients discharged	7,266
Patients delivered	5,914
Toxemic Patients, Total	461
Convulsive Toxemia	32
Nonconvulsive Toxemia	429

Table 2. *Deaths from toxemia of pregnancy, Parkland Hospital.*

	Number of Deaths					
					Total	
	1944	1945	1946	1946	number	per cent
Convulsive toxemia (32 patients)	0	3	0	0	3	9.4
Nonconvulsive toxemia (429 patients)	0	2	1	0	3	0.7
Total (461 patients)	0	5	1	0	6	1.3

Note that most of the fatilities (five sixth) occurred in 1945.

From the Departments of Obstetrics and Gynecology of the Southwestern Medical College and of Parkland Hospital.

Presented at the 90th Annual Session of the Missouri State Medical Association, March 14-17, 1948.

* Dieckmann, William J.: The Toxemias of Pregnancy, C. V. Mosby Co., St. Louis, 1941.

a patient exhibiting two of the classic triad of hypertension, albuminuria and edema.

DEATHS

It will be seen that five of the six deaths occurred in one year. More, they were grouped into nine months of that year. There was a common feature in the events leading to each of these five deaths and, therefore, each patient deserves individual attention.

REPORT OF CASES

NONCONVULSIVE TOXEMIA

Patient 1. When first seen, this 15 year old primigravida, Z.G., had a blood pressure of 185/110, "severe" edema and 4 plus albuminuria. She was given heavy sedation with morphine, and her circulatory system was overloaded by the intravenous infusion of both isotonic and hypertonic solutions. She died of pulmonary edema February 16, 1945, thirty-four hours after admission.

ECLAMPSIA*

Patient 2. L.A., 16 years old, was first seen during the seventh month of the first pregnancy with a blood pressure of 210/140, marked edema and 4 plus albuminuria. During the three hours after admission she had five convulsions, received morphine in quantity and apparently was controlled. Labor began spontaneously and terminated with a stillborn child the next morning. Because of a postpartum blood pressure drop to 110/70 and a relative anuria, heroic restorative measures included the intravenous administration of plasma, blood and hypertonic solutions. She gradually developed pulmonary edema with a pink frothy sputum during the next ten hours and died on March 19, 1945, thirty-five hours after admission.

NONCONVULSIVE TOXEMIA

Patient 3. C.G., 38 years old, was admitted in active labor at term with a blood pressure of 175/92, 2 plus edema and 1 plus albuminuria. This para 6 had "fits" with the first pregnancy and swelling of the feet during three subsequent pregnancies. An aunt died of "stroke." Catheterization produced only 5 cubic centimeters of urine. Large quantities of fluid were administered intravenously during the course of a slightly prolonged labor. She began to pass a dark, frothy material by mouth and became comatose. Moist rales were heard over the right posterior lung base. She died undelivered June 27, 1945, the day after admission. Small areas of encephalomalacia in the hypothalamus and pulmonary edema were found at postmortem examination.

ECLAMPSIA

Patient 4. B.J., a 20 year old primigravida, was admitted in labor with a blood pressure of 220/156, 3 plus edema, 4 plus albuminuria, and a living child was born. The blood pressure fell during labor and for twelve hours postpartum. Then it rose to former levels, only to fall off again to 160/80. At the height of the rise she had a tonic convulsion. Large quantities of hypertonic fluids were injected intravenously. She died on the fourth puerperal day, August 13, 1945, with a terminal fever of 107.6 F. Intracranial hemorrhage,* cerebral edema and pulmonary edema and hyperemia were found at postmortem examination.

ECLAMPSIA

Patient 5. L.F., 32 years old, was admitted during the seventh month of the first pregnancy because of a blood pressure of 180/115, 3 plus edema and 2 plus albuminuria. The next day she had two convulsions but recovered under heavy sedation and improved during the next six days. Labor was induced and conducted under a "single shot" caudal, with average but not excessive blood loss. The patient went into shock immediately postpartum and stopped breathing. She was resuscitated and heroic treatment inaugurated. During the next four hours, despite normal hemoglobin values and average blood loss at labor, she received 3,200 cubic centimeters of whole blood, 2 units of plasma and ancillary treatment. She developed pulmonary edema and deep coma and died ten hours postpartum, on October 28, 1945. The findings were confirmed at postmortem examination.

The sixth death in the series occurred one year later. Presumably, the patient died with a pleurisy of pyogenic origin. The protocol is included for the sake of completeness.

NONCONVULSIVE TOXEMIA

Patient 6. M.W., a primigravida 18 years old, was admitted during the seventh month with a history of cough for four and one half months, chest pain for one week and bloody sputum for one day. Two hundred and fifty cubic centimeters of thin blood-tinged fluid were removed by right thoracentesis the next day and hemolytic staphylococcus aureus cultivated therefrom. As an incidental finding, the patient was toxemic, with a blood pressure of 180/100, 3 plus edema and 3 plus albuminuria. Labor began spontaneously and resulted in a macerated stillbirth. The patient died on October 28, 1946, twenty-eight hours after admission, with a pulse rate of 160 per minute, a respiratory rate of 44 per minute and a temperature of 102.0 F.

DISCUSSION

Each of the first five women developed pulmonary edema after excessive intravenous injection of fluids. Patient number 5 is especially noteworthy since death took place six days after the convulsive seizures. How many healthy people could withstand the transfusion of 3,200 cubic centimeters of whole blood and 2 units of plasma within a four hour period?

Vasospasm, with resulting tissue anoxia, is probably the basic mechanism of the eclampsia syndrome. It is not known what produces vasospasm. Such patients develop pulmonary edema more readily and with less overload than normal women, or relatively normal women with simple dehydration. Hypertonic glucose, 10 to 25 and even 50 per cent, solutions are in vogue for treatment of eclampsia because they are supposed to protect the liver and to act as a diuretic by raising kidney filtration pressure. On the contrary, anuria in the eclamptic woman is of little moment since it disappears with recovery of the patient and lasts but a few days. In this respect, there is a striking clinical similarity between the kidney of eclampsia and the

* Eller, W. C.: Cerebrovascular Complications of Pregnancy, Am. J. Obst. & Gynec. 52:488-491 (Sept.) 1946.

* For purposes of this paper, "eclampsia" is defined as "toxemia of late pregnancy with convulsions."

lower nephron nephrosis following transfusion reaction. It is well recognized that complete kidney shutdown does not kill immediately. For example, the senior author saw a woman, accidentally poisoned with bichloride of mercury, survive fourteen days in the face of absolute anuria. Others with experience of similar clinical or operative accidents report comparable findings. To repeat, oliguria for a few days is not, in itself, momentous and does not demand symptomatic relief. There is therefore, no necessity to combat anuria. Moreover, it cannot be overcome by treatment, which itself may cause pulmonary edema.

Following recognition that pulmonary edema accounted for, or was a feature in, the deaths of five toxemic women within a comparatively short period, the departmental philosophy underlying treatment of eclampsia was reviewed and a policy of limitation of fluids adopted. Sedation with morphine sulfate and chloral hydrate was continued. During 1946 and 1947 a consecutive series of twenty-one patients with eclampsia (toxemia of late pregnancy with convulsions) was treated without maternal death* (table 3). The usual characteristics of any series of statistics on eclampsia may be noted here. In addition, eight of these twenty-one women were severely eclamptic by Eden's criteria, which include: prolonged coma, pulse rate above 120, temperature of 103 F. or higher, blood pressure above 200 millimeters, more than ten convulsions, 10 grams or more of albumin in the urine, absence of edema. The presence of two or more of these indicates severe eclampsia.

Some comment regarding the six infant fatalities during 1947 is in order, since so many believe that morphine sulfate harms the fetus and newborn.

* Since these data were collected, another eclamptic patient, the twenty-second, has recovered.

Table 4. *Fetal Death*

Name	Birth Weight (grams)	Cause of Death
M.F.B.	2,806	Macerated stillbirth
M.S.	1,587	Macerated stillbirth
S.T.	1,602	Born alive. Died shortly
J.J.	4,270	Born alive. Died 19 minutes later. Cause unknown
C.W.	1,588	Born alive. Died next day
E.C.	1,587	Born alive. Died shortly

Note that only one fetal death, the infant of Mrs. J. J., can be attributed to factors relating to labor.

Table 4 gives the birth weight and reasons for death. Only one death, that of the infant of J.J., a 19 year old primigravida, possibly can relate to labor. The child was mature, but died nineteen minutes after birth. Autopsy permission was not forthcoming.

Current treatment of eclampsia is illustrated by Mrs. E.C., a 26 year old gravida 2, who was discharged, alive and well, on November 8, 1947.

REPORT OF CASE

Sunday, October 26, 1947. The local physician was consulted during the seventh month of the second pregnancy because of the classical symptoms of headache, blurred vision and swollen ankles. The patient had the first convulsion in his office and was immediately taken 80 miles to the hospital. Convulsions two, three and four occurred en route. On arrival there was profound coma, blood pressure of 190/120, 4 plus edema and 4 plus albuminuria. Sedation with morphine sulfate and chloral hydrate was begun at once. Catheterization inaugurated convulsion five.

Monday, October 27, 1947. Sedation with morphine and chloral was continued. The patient was in profound coma but no more convulsions occurred. Total fluid intake was 1,725 cc. of isotonic solution. Output (after catheterization) was zero.

Tuesday, October 28, 1947. Sedation was continued, but less heavily. Some phenobarbital was substituted

Table 3. *Eclampsia,* Parkland Hospital*

Name	Age	Race	Parity	Month (disch.)	Convulsions		Morphine (grains)	Infant fate
					onset	number		
				(1946)				
TO	32	W	5	Mar.	AP	1	0.75	Alive
LM	15	M	0	Mar.	AP	3	1.25	Alive
LR	18	B	0	Mar.	AP	9	0.80	Alive
CBN	40	W	0	May	PP	2	0 50	Alive
LK	22	W	0	June	IP	1	2.25	Alive
GM	35	B	4	Sept.	PP	4	2.00	Triplets-A
KT	19	B	3	Sept.	IP	3	2.00	Alive
LR	20	W	0	Sept.	IP	1	0.75	Alive
AW	14	B	0	Oct.	IP	2	2.75	Alive
RLF	19	B	0	Nov.	IP	1	3.75	Alive
				(1947)				
MFB	18	B	0	Jan.	AP	9	3.25	Alive
LJ	17	B	0	Feb.	AP	1	2.13	Alive
PB	19	B	0	Feb.	AP	2	5.00	Alive
DPH	28	B	1	Feb.	PP	1	1.16	Alive
MB	22	W	0	Feb.	PP	1	0.50	Alive
NH	13	B	0	May		2	2.25	Dead
MS	22	B	0	May	AP	1	1.63	Dead
ST	16	B	0	May	AP	10	4.50	Dead
JJ	19	B	0	Sept.	IP	1	0.75	Dead
CW	15	B	0	Sept.	AP	3	2.50	Dead
EC	26	W	1	Nov.	AP	5	2.00	Dead

* There was no maternal death in this consecutive series of 21 women with convulsive toxemia.
Note: Thirteen women were 20 years, or less, of age. Sixteen women were primigravid. Most of the eclampsia classically occurred in late winter and early spring, or early fall. The child of Mrs. P. B. survived the antepartum, and the child of Mrs. R. L. F. the intrapartum, administration of 5 and 3.75 grams of morphine sulfate, respectively.

for the heavier drugs. Artificial rupture of bag of waters was performed for induction of labor. A 1,587 gram infant was born, but succumbed the next day. Total fluid intake was 1,050 cc. of isotonic solution. Output was 525 cc.

Wednesday, October 29, 1947. Sedation was continued. Patient was beginning to become rational and asked, "What happened?" and "Where am I?" Multitudinous laboratory tests were performed but nothing significant was discovered. Total fluid intake was 1,080 cc. Output was 1,100 cc.

Thursday, October 30, 1947. Total fluid intake was 970 cc. Output was 1,050 cc.

Friday, October 31, 1947. Total fluid intake was 3,120 cc. Output was 2,400 cc. The patient was encouraged to force fluids.

Friday, November 7, 1947. Total fluid intake was 6,900 cc. Output was 5,660 cc. Phenobarbital was discontinued.

Saturday, November 8, 1947. Patient was discharged.

SUMMARY OF CURRENT TREATMENT AT PARKLAND HOSPITAL

Upon admission, or after the initial convulsion, ¼ grain of morphine is injected intravenously and ¼ grain subcutaneously. Additional drug is administered with 30 minutes between treatments for time to observe effect in order to reduce the respiratory rate below 14, but not below 10, per minute. Occasionally, an enema of 20 to 30 grains of chloral hydrate in 200 cubic centimeters of water is substituted in order to avoid excessive morphinization. Phenobarbital is reserved for the postconvulsive period. External stimulus, including bright light, noise, needle pricks and catheterization is avoided. A medical student remains in constant attendance. Fluid intake is limited to replacement of the daily insensible loss, calculated as 1,500 cubic centimeters, plus the amount of previous twenty-four hour urinary output. No hypertonic solution is employed. Five per cent glucose in distilled water is the standard infusion material. The obstetric status is ignored during the convulsive phase and treatment conducted without regard for the pregnancy. After convulsions are controlled, sedation is achieved with 3 grains of phenobarbital daily. Labor is induced at least two, and preferably three, days after the last convulsion. (It was instituted too soon in Mrs. E.C. although no harm resulted.) No ancillary treatment is employed. This treatment is simple and represents "scientific neglect." It is effective, as evidenced by a series of twenty-one consecutive eclamptic women who recovered.

SUMMARY

Five women with toxemia of pregnancy died within a relatively short space of time. Pulmonary edema resulting from excessive administration of fluids accounted for, or was a feature in, the deaths of each of them. In consequence, the treatment of preeclampsia or eclampsia was revised to limit the fluid intake to replacement of the daily insensible loss, calculated as 1,500 cubic centimeters, plus the amount of the previous twenty-four hour urinary output. Since then, twenty-one consecutive eclamptic women were treated without fatality.

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POINTS OUT NEED OF ROUTINE EXAMINATION FOR STOMACH CANCER

Routine examination with roentgen ray films is the only effective means for discovering the majority of stomach cancers at an early stage, according to Leo G. Rigler, M.D., of the department of radiology and physical therapy of the University of Minnesota, Minneapolis.

Writing in the August 21 issue of *The Journal of the American Medical Association*, Dr. Rigler points out that "the procedure is capable of discovering most of the tumors present, even if of extremely small size.

"The vast majority of persons coming to surgical treatment are in an advanced stage of the disease so that surgical treatment is impossible in a high percentage of the cases.

"Surgical cures of carcinoma of the stomach will continue to be infrequent unless the diagnosis is made before the development of any appreciable symptoms or physical signs," he observes.

As the incidence of the disease rises sharply after the age of 50, such an examination is especially desirable for persons over that age, Dr. Rigler says.

For practical use of the examination on a wide scale, the group to be examined should be chosen by age and results of a preliminary test for gastric acidity, according to Dr. Rigler. If all persons past 50 were given a triple histamine test and a gastric analysis, and those for whom the analysis indicated a low gastric acidity were examined with roentgen ray films, most cancers of the stomach could be discovered, he points out.

Use of the preliminary gastric analysis would reduce the number of persons to be examined to approximately 30 per cent of the age group, he indicates.

In a study made by Dr. Rigler of 544 persons over the age of 50 who showed no symptoms of the disease but whose gastric analyses showed either absence of hydrochloric acid or less than 30 units of free hydrochloric acid, three stomach cancers and 19 "presumably benign" stomach polyps were discovered by routine roentgen ray examination.

The study was made during 1946 and 1947 in cooperation with the department of surgery and the outpatient department of the University of Minnesota.

Routine roentgen ray examination of only persons who show such possible indications of stomach cancer as gastric ulcer, pernicious anemia and stomach polyps is not a solution of the stomach cancer problem, Dr. Rigler says. A large number of stomach cancers would still exist in persons showing no symptoms, he believes.

Fluoroscopy or examination by roentgen rays without a preliminary gastric analysis would not be practical for routine examination on a large scale because of the expense and personnel which would be required, according to Dr. Rigler.

Photofluorography "might constitute a fairly adequate examination and would be time saving and relatively inexpensive," he says.

AVOIDABLE AND UNAVOIDABLE OBSTETRIC HEMORRHAGE

HUGH G. HAMILTON, M.D., *Kansas City*

IN THE LAST ten years, medical science and, keeping pace with it, the science of obstetrics and gynecology have made great strides in the reduction of mortality. The gross total maternal mortality in the United States and in the State of Missouri has shown a satisfactory and consistent drop. Unfortunately, obstetric hemorrhage, both early and late, still comprises approximately 30 per cent of the maternal deaths. Eleven years ago, upon the platform before this Association, the problem was well stated by Richard Schutz when he said, "Thousands of tons of blood are sacrificed each year and in this ruddy flood float the bodies of 30 per cent of the mothers who die from conditions associated with pregnancy."

The causes of mortality readily divide themselves into early hemorrhage and hemorrhage late in pregnancy, and also into the classification of being either avoidable or unavoidable. In the event that the bleeding is determined to be of malignant, neoplastic origin, whether it be early or late, one of course is forced to proceed with the active treatment of the malignant process.

The most common cause of hemorrhage in early pregnancy is abortion. The problem of abortion divides itself into that of spontaneous and criminal abortion. In the care of the criminal abortion, which is always potentially septic, the first consideration, unless the bleeding is of alarming extent, is directed toward the control of sepsis. Subsequently, one must evacuate the retained secundines when the septic factor is controlled. In the event that the woman is bleeding to an alarming degree, one must proceed with active measures to control the bleeding, because it is demonstrated that as the amount of hemorrhage advances so advances the susceptibility of the patient to sepsis.

In spontaneous abortion, one has to deal first with threatened abortion and second with the inevitable or the incomplete abortion. It is standard practice in the care of threatened abortion to place the woman upon complete bed rest, sedation and appropriate endocrine therapy. However, such an eminent authority as Bayard Carter feels that he demonstrates little improvement in his percentage of salvage of threatened abortion by any regimen of endocrine therapy and now contents himself with the use of thyroid and large dosage of stilbestrol.

If it be an inevitable abortion, or if the case deteriorates into an incomplete abortion, one should institute active therapy such as uterine packing, gentle curettage under anesthesia and prophylactic antibiotic and chemotherapy. For profuse bleeding, the patient should be subjected to immediate curettage or to uterine and cervical packing if the cervical os is too firm for evacuation of the uterine contents.

In a review of fifty-two obstetric deaths from hemorrhage in Philadelphia, Beecham found 62 per cent was preventable or avoidable. He states, "The usual story is not that of sharp marked hemorrhage for a few minutes and then sudden death. Rather, the picture brought to light in this study was one of steady moderate bleeding because no one becomes alarmed. There was an occasional case where bleeding was sudden and great in volume with the patient going into shock rapidly. But in even such a case, there is usually time for adequate treatment." He found that the average time between the onset of hemorrhage and death was 5 hours and 20 minutes which was long enough for treatment. The earliest death was 1½ hours, which still gave time for therapy to have been instituted.

Although that study deals with the problem of hemorrhage in late pregnancy and postpartum hemorrhage, nevertheless its lessons are applicable in the bleeding states in early pregnancy. Everyone is, or should be, aware of the hazard in the patient who bleeds modest amounts for a prolonged time and then has an ultimate moderate hemorrhage with a fatal result due to previous depletion of the solid and fluid blood constituents. Even though the final hemorrhage is not fatal, it is significant to remember the figures which Dieckmann gives in quoting Pastore. He states that the incidence of postpartum or postabortal infection rises 400 per cent if the hematocrit drops below 30 per cent.

One must remember the possibility of such cases as reported by Buckner and J. C. Hirst, in which with the early abortion of one twin of heterozygous twins, the other twin has been carried on to full term with normal delivery.

The other grim reaper of early pregnancy is ectopic pregnancy. Its symptomatology, of moderate external hemorrhage with usually one or two mild premonitory attacks of abdominal distress before its dramatic signs of internal hemorrhage appear, has been so well presented in the works of Schumann, Findley, Graffagnino, Hudnell Ware and others that it is unnecessary to dwell upon the diagnosis of this condition. As many women have died from inadequate preoperative blood transfusions as have been lost by too great delay in diagnosis or too dilatory an approach to active therapy. In a potential case of ectopic pregnancy, one should be suspicious if the patient has had a previous tubal pregnancy, as pointed out by Adair, Stander, Schumann and Bryant. Fifteen per cent of patients with ectopic pregnancy will have a repeti-

Presented at the 90th Annual Session, Missouri State Medical Association, March 14-17, 1948, St. Louis.

tion of the condition. One, therefore, could think that it would be a conservative maneuver to remove the other tube at the time of surgery and some writers have advocated this. However, be conservative in surgery because 47 per cent of women having an ectopic pregnancy will have subsequent normal living children, and many years may elapse between the occurrence of two ectopic pregnancies. Bryant quotes one case in which there were eleven years between the two events, and I have had one case in which twelve years intervened.

Remember, in a case of ectopic pregnancy, one should not just expose the ectopic pregnancy that is bleeding, remove the tube and close the abdomen without inspecting the other side. In cases such as MacDonald's, ectopic pregnancies can exist simultaneously in both tubes. Never do additional elective surgery concomitant to an operation for ectopic pregnancy as it causes an inevitable rise of both mortality and morbidity.

One must consider also the rare condition of true cervical implantation of a pregnancy. Paul Schneider reports a collection of twelve cases of true cervical implantation with extremely violent hemorrhage. This dramatic hemorrhage is due to there being no decidual plate developed in this area and the placenta attaches as in a true placenta accreta. Two of these twelve cases had a fatal termination and all but three required suturing of the cervix or hysterectomy or cervical amputation. Fortunately, this extremely serious condition is a medical rarity.

Hydatidiform mole causes bleeding in early pregnancy as well as later on. The bleeding usually is recurrent until sufficient uterine irritability is developed that the patient will expel the grapelike bodies of the mole, unless the hemorrhage continues to be of such character as to bring the suspicion of the attending accoucheur to a point where he will be directed to make the diagnosis himself. The bleeding frequently resembles that of recurrent threatened abortion with the hemorrhage becoming greater each time it occurs. Upon diagnosis, if the condition of the cervix permits, evacuate the mole from below with a careful, dull curettage, as the uterus can be perforated readily, as pointed out by Mathieu. If the cervix does not warrant evacuation from below, the method of choice is abdominal hysterotomy. In either case, extreme care must be exercised to prevent third stage hemorrhage. The patient must have repeated Friedmann tests to be sure that the mole has been completely removed, and also to guard against the development of a chorion epithelioma from a retained piece of the mole.

Hydatidiform mole can occur at any age, although its greatest incidence is in women more than 40 years of age. Charles reports the condition in a 52 year old woman and Feenders reports a mole in a woman of 55. Chesley and Cosgrove quote the case of a woman who had an hydatidiform mole which was completely removed and in whom years later a subsequent pregnancy terminated in another hydatidiform mole. There is merit in the suggestion of some authors that if the patient is 40 years of age or over, and a multipara, that she be subjected to hysterectomy at the time of the evacuation of the mole.

Chorion epithelioma can occur following an hydatidiform mole or following an apparently normal pregnancy with an apparently normal placenta. In either case, if a previously negative or low titer Friedmann test commences to become positive or to increase in titer, the presence of chorion epithelioma should be suspected. Also, if a woman who has not bled following delivery, or hydatidiform mole evacuation, commences to bleed, she should be suspected of chorion epithelioma. A chest roentgen ray for metastasis should be made before surgery is done. Surgery is useless if metastasis has already occurred, as hysterectomy will not improve the patient's prognosis.

Dindia and Turcotte point out that bleeding in early pregnancy is much more frequent in the multipara and, as such, usually represents threatened abortion. It usually is observed by the patient as an abnormal menstrual period which is scant or irregular and rarely is there profuse bleeding in these cases.

One must always bear in mind, too, the possibility that bleeding early or late in pregnancy can be associated with the blood dyscrasias. In this connection, Nordland, et al, reports a case of thrombocytopenic purpura who was subjected to splenectomy at five months gestation and in whom the spleen showed sarcoid disease. Subsequent to splenectomy, the patient developed a normal platelet count, had an uneventful recovery and had a spontaneous delivery at term of a normal living child. Dinsmore and Dutlinger report a case of thrombocytopenic purpura, treated by splenectomy, who was subjected to cesarean section one week later for vaginal bleeding upon a diagnosis of partial abruptio placenta. Unfortunately, in their case they delivered a macerated fetus. It is true that the blood dyscrasias of pregnancy are of rare occurrence but, nonetheless, present a real hazard to the unwary. I recently had a case of purpura which was treated by transfusion of fresh citrated whole blood at the onset of labor with a successful termination and no excessive blood loss.

Abruptio placenta can be the cause of alarming blood loss in later pregnancy. The blood lost in abruptio placenta may be either concealed or external. Its symptomatology is usually sudden and acute in onset and, if not treated actively and early, the symptomatology may progress with alarming and dramatic rapidity. The classic sign of board-like rigidity of the uterus is present in not more than 60 per cent of the cases, and usually appears if the majority of the hemorrhage is concealed. This is due to the pressure of the retained blood in the distended uterus being forced into the myometrium,

producing the so-called Couvelaire effect, which, in turn, stimulates the tonic contraction which is supposed to be pathognomonic of abruptio placenta. Authorities state that abruptio placenta may be delivered vaginally if the cervix is soft, effaced and showing dilatation. Otherwise, abruptio placenta must be treated by cesarean section and, in rare cases in which the Couvelaire effect is too pronouncedly present, an hysterectomy must be performed. Needless to say, it is important that the patient be given an adequate amount of preoperative blood as well as during and after surgery.

Douglas reports a case of abruptio placenta treated by cesarean section with a postoperative massive vaginal hemorrhage, which kept bleeding for five days and necessitated reoperation following repeated transfusions. The reoperation was a hysterectomy for laceration of the uterine wall extending into the right broad ligament at the site of the manual removal of the partially abrupted placenta. To my sorrow, in the last year I had a similar case following a breech delivery, with partial abruption and laceration into the right broad ligament which was subsequently treated by hysterectomy. In Douglas's and in my case, the end result was good but many transfusions were required.

Spontaneous rupture of the uterus usually occurs late in the pregnancy, at the time of the onset of labor, or at the time of impending labor. In some cases, it is attended by moderate external vaginal hemorrhage, but usually there is little or no external hemorrhage. The onset is acute with the patient having extreme abdominal pain and signs of rapidly progressive shock. The uterus which previously had been ovoid in shape seems to disappear and the baby usually is felt clearly beneath the abdominal wall from being extruded into the abdominal cavity through the rent in the uterus. It is predisposed to by previous cesarean section, but does not necessarily follow. It most commonly follows classical cesarean section. Motsay and Penn report a case of a para 8, gravida 5, who had no previous cesarean section but had a spontaneous rupture of the uterus at the twenty-fourth week. In her case, the uterus was repaired and not removed. She had an uneventful convalescence, receiving repeated blood transfusions. Buford Hamilton had a patient who had three spontaneous ruptures of the uterus at full term within a period of six years although, in her case, she had had a previous classical cesarean section. In the first two instances, the rent in the uterus was repaired and in the third instance, a hysterectomy was performed. At each time this woman had a ruptured uterus she received a minimum of three transfusions of 500 cc. of whole blood. In the treatment of spontaneous rupture of the uterus, transfusion must be started immediately upon making the diagnosis, must be continued repeatedly through the time of surgery and through the postoperative period until the patient's blood loss has been restored and the shock or impending shock has been successfully averted. The usual treatment of ruptured uterus is hysterectomy, upon the basis that if the wall is sufficiently diseased to rupture with this pregnancy, it will be so diseased as to rupture with a subsequent pregnancy.

Placenta praevia is the other great cause of antepartum or intrapartum and, in some cases, postpartum hemorrhage. It is a sound rule that whenever a patient in late pregnancy has painless bleeding, she should be hospitalized at once and considered to be a case of placenta praevia until proved otherwise. Archer and Adair show that roentgen ray, using a soft tissue technic, can be of great value in the diagnosis of placenta praevia without the necessity of using contrast media or air in the bladder. Davis and Campbell state that when one includes with the frankly hemorrhagic deaths from placenta praevia, the ones listed as puerperal sepsis and as embolic phenomena which originate in cases of placenta praevia, that from 15 to 20 per cent of all maternal deaths are due to this complication. Yepes and Eastman, Herman Johnson, David Findley and Davis and Campbell show that this is an inexcusably high mortality rate, and they demonstrate clearly that under proper hospital and technical care, the mortality rate from placenta praevia should sink to zero. Their methods of care differ, but their end results are the same. Johnson reports seventy-nine consecutive cases of placenta praevia with no maternal mortality, with the best fetal results in those subjected to normal delivery and the next best in those with cesarean section.

Seventy-five per cent of placenta praevia occurs in multipara and 25 per cent in primipara. The bleeding before labor is due to effacement moving the highly vascular attachment area of the lower uterine segment, and the high incidence of embolism is due to the easy mobilization of thrombi in the sinuses of the placental site. The amount of the initial bleeding will depend on the size of the maternal sinus that is opened by the tearing loose of the placenta. Less than 20 per cent of women will have a serious or near fatal hemorrhage with their first bleeding incident. Pathologic presentations of the fetus are frequent in placenta praevia because the placenta makes it difficult or impossible for the presenting part to enter deeply into the pelvis. Unless roentgen ray clearly demonstrates that it is a total placenta praevia, vaginal examination is essential to determine the exact location of the placenta.

If the placenta praevia is total, a cesarean section is indicated. If examination reveals a partial or a marginal placenta praevia, the majority of cases can be delivered vaginally, unless the blood loss is serious and continuing, or if the cervix is long and uneffaced, or if in an elderly primipara, or if the pelvis is inadequate or borderline in size. In those cases in which there are no contraindications, as mentioned, to vaginal delivery, delivery will best be accomplished by rupturing the mem-

branes and allowing the head to drop down and compress the bleeding point. In the event that one errs in judgment at this point and bleeding continues after the rupture of the membranes, scalp traction by Willett's method is effective and can be applied by either Willett's forceps or by two tenacula properly applied to the scalp. In the use of scalp traction, the damage to the scalp is minimal and easily treated. Cesarean section with hysterectomy should be reserved for cases which are potentially or obviously infected, or in whom there is serious uteroplacental apoplexy. There is little, if any, place for Braxton-Hicks version or the use of the Voorhees' bag.

The proper treatment of a case of placenta praevia begins in the prenatal period with a careful blood study which includes a determination of hemoglobin content, red blood cell count, Rh reaction and serology. If the hemoglobin is under 10 grams in spite of antianemic therapy, transfusion always should be resorted to prior to any method of emptying of the uterus. If the patient is given proper prenatal care with proper attention to the maintenance of an adequate blood count and hemoglobin, the patient will be in much better condition to stand the potential shock of placenta praevia.

The third stage of labor in the placenta praevia case is frequently pathologic and exhibits severe hemorrhage in many cases. This is due to several factors: (1) the lack of musculature in this area may prevent the proper closure of the sinuses, (2) the partial separation with bleeding may be due to failure of contraction and retraction of the placental site from poor muscular power, and (3) the trauma of delivery to this weakened portion of the uterus may produce rents in the uterine or cervical wall. Ergonovine, given intravenously, will help with separation and contracture in many cases, and expulsion should be produced immediately upon separation. In the event separation is delayed and there is bleeding, the placenta should be removed manually at once, taking into account the proper aseptic precautions. However, the risk of infection is less than the risk of continued blood loss.

If, after the expulsion of the placenta, there is continued bleeding, the interior of the uterus should be inspected manually for retained placental fragments and for the possibility of tears in the lower uterine segment, the cervix and the vaginal vault. Bleeding lacerations of the cervix and vagina should be sutured and those of the lower uterine segment or fundus should lead to an immediate hysterectomy as soon as sufficient blood has been administered to the patient to make her a satisfactory operative risk. If there is continued bleeding from the placental site without any other damage being present, it frequently can be controlled by the use of ergonovine, intravenously, and by packing the interior of the uterus with oxidized cellulose as shown by Harley Anderson. The use of properly matched and Rh compatible blood should be employed freely in the antepartum, intrapartum and postpartum care of the patient with placenta praevia, always making the error on the side of giving more blood than necessary rather than too little.

Any institution which does not support a blood bank should have an adequate supply of plasma on hand at all times for use during the time needed to cross-match blood which is Rh compatible. The obstetric department without a blood bank should have a complete list of immediately available donors of each type and each Rh status. Plasma is the best substitute for blood and Ringer's solution and Hartman's solution or saline are next. Hypertonic glucose should not be given until after blood is started or given as it will, while giving an initial rise in blood pressure, demonstrate a secondary more serious blood pressure drop unless blood and plasma have been administered.

If patients have been instructed to report immediately upon the appearance of bleeding and the necessity of their cooperation properly emphasized, the mortality from placenta praevia should disappear. The fatal termination of placenta praevia bespeaks either inadequate instruction of the patient, failure of the attendant to realize the seriousness of the situation, failure of the institution to be prepared to meet hemorrhagic emergencies or the technical failure of the medical attendant in the manipulative skills and the use of the full armamentarium of therapy.

There are other rare and unusual cases which are associated with exceptional amounts of blood loss, as in the case of O'Connor and Bradley, who report a spontaneous retroperitoneal hemorrhage which filled the posterior portion of the pelvis and caused a dystocia. In this case, they did a cesarean section, left the mass alone and, at subsequent examination, found there had been a spontaneous resorption of the hemorrhagic mass.

The majority of writers report blood losses in well handled vaginal deliveries ranging from 179 cc. as reported by Calkins up to 350 cc. In a carefully controlled series of cases by Dieckmann and Daily, they found that the blood loss at cesarean section averages 539 cc. with a low of 170 cc. and a high of 1,410 cc. The blood loss was lessened markedly if the woman had been in labor.

The blood loss of the third stage of labor and postpartum hemorrhages or, in what Javert calls the fourth stage of labor, accounts for one third of the maternal deaths. As Javert points out, one cannot consider that labor has actually terminated until the fourth stage of labor is complete and the uterus is firmly contracted and stays retracted. Hemorrhage with shock may occur after the delivery of the child as a result of inversion of the uterus, cervical laceration, fundal laceration, vaginal vault laceration, uterine myoma, uterine atony from anesthesia or overdistension from twins or hydramnios, retained placental tissue, hydatidiform mole, chorion epithelioma or subinvolution. Douglas reports a massive postpartum hemorrhage as-

sociated with uterine tear from manual removal of the placenta. Munnell and Taylor report postpartum hemorrhage in a series of 136 multiple births, and one fatal postpartum hemorrhage of 2,300 cc. of blood from overdistension of the uterus.

Practically all authorities agree that the placenta normally separates quickly after the delivery of the child; that it is a mechanical maneuver resulting from the reduction in size of the portion of the uterus to which the placenta is attached; that the separation occurs in the first or second contraction following the expulsion of the child and it is the result of the reduction in the volume of the uterine cavity. Leff denies the value of the retroplacental clot for aiding the separation and states that immediately upon the separation of the placenta, that he agrees with Crede (1861), that the placenta should be expressed promptly. He states that the Duncan and Schultz placentas are merely the types of presentation, being the result of high or low attachment and feels, as do many others, that the terms should be eliminated from consideration. At this point, there is disagreement in technic. Greenhill, Beck, Stander and Titus favor a moderate waiting policy in regard to the expulsion of the placenta after separation. On the other hand, Calkins, Pastore, Davis and Boynton, O'Connor, Leff, Sewall and Coulton and Dieckmann et al, favor the immediate expulsion of the placenta upon separation and state that, as soon as Calkins sign is demonstrated, the placenta should be expelled from the lower uterine segment or vagina, whichever place it may be lying. This school of thought feels that, since the woman is subjected to several factors which tend to slow the emptying of the placenta from the uterus after separation, the blood loss will be diminished by its being expelled immediately from the genital tract.

Dieckmann demonstrates that, if the woman be given ergonovine intravenously as the shoulder is delivered, and if from two to two and one half minutes is consumed in the completion of the delivery from this time forward, blood loss can be materially reduced. If early expression of the placenta is practiced, Calkins shows there is practically no relationship between the type and character of labor pains and the amount of blood loss. Sewall and Coulton and Dieckmann et al state that, if the placenta does not separate and be expelled immediately, early manual removal of the placenta should be practiced. They say that the operator should regown and glove, the patient should be redraped and that strict surgical sepsis should be observed, but that the danger of additional blood loss is greater than the danger of sepsis in the face of modern hospital conditions. Sewall and Coulton advocate the use of prophylactic, antibiotic and chemotherapy following manual removal of the placenta for three afebrile days. They have, in a series of cases in which this was practiced, a corrected morbidity of zero. Dieckmann, Pastore and Davis show that there is a concomitant increase in sepsis with an increase in blood loss and that operative obstetrics or destructive operations on the fetus increase the blood loss and hence the sepsis rate, but that the sepsis rate of high blood loss is greater than the sepsis rate of manual removal of the placenta. The statistical studies of Peckham and Kuder, and Gordon and Davis show definitely that the majority of postpartum hemorrhage deaths are preventable, though they still occur in the best regulated institutions. The work of O'Dell and Seski shows that there is an average blood loss of 253 cc. from an episiotomy wound; and, therefore, it behooves one to do episiotomies late and to repair them immediately to reduce the amount of blood lost from this source which, added to other losses, may make the difference between a successful and unsuccessful termination of a labor.

Delayed hemorrhage after the tenth day usually is found to be due to thrombosed vessels at the placental site with leakage around them and rarely are pieces of placental tissue encountered upon dull curettage at this time.

After the delivery of the child, if hemorrhage occurs, immediately evacuate the uterus and, the placenta being already out, if an oxytoxic drug does not control the bleeding, one must look for other sources of bleeding. First, manually palpate the uterine cavity and subject the cervix and vaginal vault to visual inspection. If there are any tears in the vault or cervix, suture and tie them. If there is a tear in the fundus, hysterectomy must be performed. Second, if none of these things are found, and bleeding continues, give a dose of an oxytoxic such as ergonovine intravenously and repeat one time. If the bleeding continues, the uterus should be packed with oxidized cellulose. Then, one should transfuse immediately with 1,000 cc. of citrated whole blood, or more if necessary. The hemoglobin then should be checked subsequently to make certain that an adequate amount of blood has been given as one always underestimates the amount of blood loss.

Factors predisposing to excessive blood loss are marked anemia with resultant poor clotting mechanism, prolonged labor with uterine atony, excessive anesthetic and analgesic agents, great multiparity with poor contractility due to uterine wall fibrosis, overdistension of the uterus by twins, large child or hydramnios, episiotomy and lacerations of the cervix, vault, uterus or perineum.

Dieckmann and Daily point out the fallacy in assuming that the plethoric state of pregnant women at term makes them better able to stand hemorrhage. There is an average of a 23 per cent increase in the blood volume but, due to the patient's weight increase, there is no increase in the amount of blood per kilogram of body weight present. In addition to the hemoglobin lost in hemorrhage, other important constituents of the blood are dissipated, such as water, serum protein, fibrinogen and platelets. In replacement, only bank blood or

fresh whole blood will meet the full requirements present.

CONCLUSIONS

1. The vast majority of deaths from hemorrhagic disorders in pregnancy are completely preventable.

2. The prevention of hemorrhagic deaths begins in the early stages of pregnancy and continues throughout the pregnancy, by the proper care of the woman and her blood count and hemoglobin.

3. Facilities for the treatment of impending shock from hemorrhage should always be available wherever a potentially parturient woman is under care.

4. Medical attendants of women in delivery should be more free in their use of whole blood in the replacement of blood loss.

5. Much more careful attention should be paid to the management of the third stage of labor and the immediate postpartum period or fourth stage of labor.

6. Every community should have available a sufficient supply of blood plasma for supportive therapy until whole blood can be obtained from the nearest available source.

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DISCUSSION

Howard B. Goodrich, M.D., Hannibal: I think all will agree with me after hearing this fine paper that Dr. Hamilton has made an excellent summary of the treatment of various types of bleeding that complicate obstetrics. He has covered this large field quite thoroughly considering the short length of time he had at his disposal.

I just wish to emphasize a few points which he brought out but which I think could stand more accentuation.

First, in the delivery of the infant, he spoke about delivering the baby slowly. This is important so that the uterus has time to contract down slowly and separate the placenta while the baby is actually still partly within the uterus. This also gives time to aspirate mucus from the baby's nasopharynx and mouth after the head is delivered and before delivering the shoulders. The delivery of the shoulders and body also should be relatively slow.

Next, I wish to emphasize the careful handling of the third stage. That is most important in trying to prevent serious hemorrhage. The fundus should be watched closely and, as Dr. Hamilton said, as soon as the placenta is known to have separated and left the fundus of the uterus, it should be expressed; but it should be done gently with not too much vigor. Rather than using severe pressure and traumatizing the uterus, it is better to do a manual removal if good aseptic conditions prevail and, of course, they should prevail if possible.

In regard to pituitrin and ergotrate, there is quite a difference of opinion as to how they should be used. The routine I use, and which I think probably is used by more physicians than any other, is to give pituitrin intramuscularly after the baby is delivered and then ergotrate intramuscularly after the placenta is delivered. This can be varied somewhat but, in my handling of the third stage in that way, it will prevent excessive blood loss, except in a few cases.

I wish to emphasize, too, this early manual removal of the placenta. It used to be, I think, that the pla-

centa was left a rather long number of hours in the hope that it would separate and come out. I have done it myself several times and, during that procedure, sometimes considerable blood would be lost. I am satisfied now that if it does not separate and come away within an hour, it should be removed manually and, with persistent bleeding, it should be done sooner than that.

The other point I wish to emphasize is adequate blood replacement. Dr. Hamilton did emphasize it but it is so important not only to do it promptly but to do it adequately; that is, as much blood as the patient has lost, if there has been a severe blood loss. In order to do this, every hospital should have an adequate blood bank. In a small hospital this does not necessarily have to be a large blood bank but it must be kept active so there is blood available. Every maternity patient should be typed and have the Rh factor determined before she goes in labor so that it will take just a few minutes to cross match the blood in the blood bank before it is given to the patient. Plasma is always useful in an emergency, but is not as useful as whole blood. It is just a temporary measure of keeping up the blood volume in case the blood itself is not immediately available.

One more point about giving blood. If the blood loss is excessive and the shock is rather profound, the blood should be given quickly. I do not mean just promptly, but the infusion of the blood should be carried out rapidly so that shock is combatted quickly. Usually, by simple gravity methods, blood cannot be given as rapidly as some patients may need it and the blood should be given under some pressure, either with pressure in the container with the blood or by the assistance of a 50 cc. syringe with which one can inject blood rather rapidly.

I certainly wish to compliment Dr. Hamilton on his fine presentation.

JOSEPH J. JOHNSTON, M.D., Springfield: Dr. Hamilton has given an excellent paper on hemorrhage.

I thought he would mention faulty obstetrics as a factor in avoidable hemorrhage. There are some that still invite trouble by unnecessary induction of labor. There are those who give pitocin to hurry labor. There are those who use forceps wrongly; namely, high forceps and delivery through an undilated cervix. These procedures are inviting hemorrhage and are to be condemned.

Maternal mortality for puerperal sepsis and toxemia of pregnancy has shown a marked decrease in the last few years. This decline is due to better trained physicians, wider use of adequate prenatal care, conservative and aseptic management of labor, the employment of chemotherapy and the increase in hospital deliveries. These same factors should lower the mortality rate from hemorrhage. Why then is the mortality rate from hemorrhage as high as ever?

Is more attention during the prenatal period paid to the urine and blood pressure than to the hemoglobin and blood count? Is more attention in the delivery room paid to asepsis than to blood loss? Missouri had twenty-two maternal deaths from hemorrhage in 1946. Four occurred before delivery. Eighteen, or 82 per cent, occurred during childbirth and the puerperium.

Anemia is certainly a predisposing factor in excessive blood loss. Bring the expectant mother to the delivery room with a full supply of good blood and she can better tolerate a blood loss. Check the hemoglobin and red blood count at intervals during the prenatal period and institute therapy as indicated. The patient should have Rh factor and blood type done before delivery or on admission to the hospital. Excessive analgesia and anesthesia, great multiparity and overdistension of the uterus are certainly predisposing factors and possible hemorrhage should be anticipated in advance.

Conserve all blood possible in every delivery as it may be needed later. Slow delivery of the baby reduces lacerations and is inducive to better placental separation. Repair lacerations and episiotomy promptly. Express placenta as soon as separation is positive. Manually remove a retained placenta before the blood loss becomes a factor.

If bleeding continues after the uterus is completely evacuated and vagina and cervix have been inspected for lacerations, the uterine cavity is explored for retained placental tissue and lacerations. If there is a tear in the uterus a hysterectomy should be done. While inspecting the uterine cavity, if no pathologic condition is found, use the hand for a tampon with external pressure and massage on the fundus. Intravenous ergotrate should be repeated as one deems desirable. Means of measuring blood loss is helpful. Plasma or, better still, whole blood should be available and used early and literally poured in if the emergency demands. The National Red Cross is developing a nationwide blood service that will be of assistance.

The type of packing material is not as important as knowing how much to pack. The pack will not always stop the hemorrhage; it is time consuming when time is precious and may conceal continued bleeding or obscure a pathologic condition causing the bleeding. Conservative and proper management of labor, particularly the third stage of labor, the judicious use of oxytoxics, hemostasis from vaginal or cervical tears, inspection of uterine cavity and giving plasma and whole blood copiously are more important and should precede packing.

It is my hope that a paper similar to the one presented by Dr. Hamilton will be on the program of the Association each year until the mortality rate from hemorrhage has declined markedly in this state.

M. PINSON NEAL, M.D., Columbia: I would like to ask Dr. Hamilton what consideration is given to the purpuric patient in advance of delivery, particularly with reference to the patient who has a low platelet count, the clotting activity of possibly 30 or 40 per cent? Also I would like to ask what can be the possible preventive therapy in that particular group of patients?

Dr. Hamilton: I wish to thank the two original discussants for their kindly handling of my effort. I agree with them completely in what they had to say, particularly Dr. Johnston in condemning meddlesome midwifery and, also, I wish to add something to what Dr. Goodrich said about the rapid use of blood. In the first place, in the majority of cases, potential trouble can be anticipated by previous events. It is sound precaution in these cases to have an intravenous infusion of saline going at the time of delivery so that one has a vessel already caught and available for use for blood.

If one has trouble getting into the vein, do not hesitate to cut down immediately and, in the use of the ordinary gravity feed method of transfusion, one can speed it up materially by hooking on to the air intake a blood pressure bulb.

Dr. Neal, I wish to thank you for raising the point about blood dyscrasias. Naturally, no one method has

ever been particularly efficacious in the handling of low platelet counts. If it is determined to be a true thrombocytopenic purpura, the only course is to perform a splenectomy.

It so happens that I have been present on a couple of cases of that sort within the last year and in both cases there was an immediate rise in the platelet count following splenectomy. Other than that, with a poor clotting mechanism, one can only give them calcium and vitamin K and hope that the clotting mechanism will be improved.

I have had one case of purpura recently in whom, at the onset of labor, a transfusion of fresh citrated whole blood was given with a nice improvement in the clotting time. In one in which a splenectomy is not indicated, the only hope is to administer fresh citrated whole blood at the onset of labor and repeat it during the labor.

INDUCTION OF LABOR

O. J. GIBSON, M.D., *Cape Girardeau, Mo.*

Quoting Dr. Dieckmann, of Chicago Lying-in Hospital: "If the termination of pregnancy is indicated after thirty-two weeks, the doctor must choose either elective cesarean section or the induction of labor. The latter would be completed preferably by vaginal delivery and rarely by cesarean section. The artificial termination of pregnancy by any method is inevitably followed by increased fetal and maternal morbidity and mortality."[1]

A complete, as well as a detailed statistical study of the results of labor induction has been presented recently by Roblee.[4] His tables present interesting material on all phases of labor induction.

The induction of labor is a major obstetric procedure which should be given the same careful and deliberate consideration as any major surgical procedure. The definition of induction of labor is any medical or surgical (including mechanical) method of bringing about uterine contractions, the ultimate aim of which is to cause the uterus to expel its contents.

The indications for the induction of labor are purely medical and are few in number.

Before the induction of labor is justifiable, the following conditions must be met:

1. The patient must be hospitalized before the procedure is attempted. This of course should be self explanatory. When labor is induced, one should be equipped for any obstetric complication, many of which cannot be satisfactorily managed in the home. Trained personnel (or the physician himself) must be in constant attendance.

2. There must be no cephalopelvic disproportion. The practice of attempting induction before term in contracted pelves carries the risk of failure or prolonged labor as well as injury to the fetus. Prematurity is an added risk.

3. The patient should be "at" or "near" term.

4. The cervix must be "ripe" for induction. If a patient is "at" or "near" term, this structure may show signs of softening and effacement; conditions which favor the success of induction. A long, firm, closed cervix is the chief factor in induction failures. The uterus is stimulated to contract, but cervical retraction does not occur. No cervical dilation being present after several hours of supposedly "good contractions," the induction is classified as a failure. In the event the cervix does efface and slowly dilates under these conditions, labor is usually prolonged. Prolonged labor of spontaneous origin is a grave problem; it is meddlesome obstetrics to risk this condition by the improper selection of patients for induction.

5. The fetus should be in the vertex presentation with the presenting part partially or completely engaged. Induction should not be undertaken in a face, brow, posterior or transverse presentation. Attempting induction, particularly the rupture of membranes, when the presenting part is floating always carries the risk of prolapse of the cord. Rupture of the membranes in a breech presentation, unless the presenting part is engaged deeply is equally as hazardous.

6. There should be no pelvic pathologic condition present. Ovarian cysts may interfere with the entrance of the presenting part into the pelvis, or be ruptured by the trauma of labor lead to hemorrhage or infection. Solid tumors of the ovary, intraligamentous or pedunculated myomata may interfere with the progressive descent of the presenting part. Rupture of the uterus is always a factor to be given the greatest consideration before inducing patients who have uterine scars resulting from section or myomectomy. The presence of uterine myomata may add to the risk of uterine rupture.

Patients who have had cervical or pelvic floor repair are poor candidates for induction. In the event such repairs have been done during the child-bearing age, and spontaneous labor does not occur, section should be considered.

The physician-patient convenience has been discarded in many clinics as an indication for labor induction. However, when patients give a history of rapid labors or live a considerable distance from the hospital, rather than risk a precipitate labor enroute to the hospital, exceptions may be made. The conditions for induction in this instance must be met with the same caution as in medical indications.

The practice of "twilighting" a patient not in labor, then starting an induction, in order to secure so-called painless labor is considered more commercial than obstetric. The use of caudal analgesia

Presented at the 90th Annual Session of the Missouri State Medical Association, St. Louis, March 14-17, 1948.

under the same condition should be discouraged.

Before considering the induction of labor, the obstetrician must bear in mind that he is responsible for two individuals, the mother and her unborn child. Every pregnant woman is entitled to emerge from her labor with a minimum of trauma to herself and child. All too frequently, the psychic effect of birth injury either to the mother or her child has led to the patient's statement that "she will never go through anything like that again." Occasionally these patients have sought the services of an abortionist rather than risk another similar experience. How many times has contraindicated induction of labor been responsible for these incidents?

The indications for labor induction, the conditions for induction having been satisfied, are as follows:

1. Ruptured membranes: spontaneous rupture of the membranes at or near term if the cervix is ripe. Dieckmann[1] warns against the use of pituitary substance when the membranes have been ruptured for twenty-four or more hours because of the increased likelihood of rupture of the uterus. In the event examination reveals a long closed cervix, the patient is kept under hospital observation; labor usually occurs in a short time. Vaginal instillations are given every eight to twelve hours during this observation period.

2. Placenta previa (marginal): If the cervix is ripe and some dilatation is present, rupture of the membranes may suffice to control the bleeding. Rarely, if the presenting part does not compress the margin sufficiently to control the bleeding, a bag is used. Occasionally section is the procedure of choice.

3. Placenta abruptio, particularly early and partial, may be handled by rupture of the membranes where some dilation is present. This of course is preceded by blood loss restoration. The more complete forms of separation are treated by cesarean section.

4. Overdistention of the uterus causing respiratory or cardiac embarrassment, particularly in multiple pregnancies or polyhydramnios. The membranes are ruptured, relieving the distention by draining off the amniotic fluid. A roentgen-ray should be taken to determine the position of each fetus in multiple pregnancies; or in the case of polyhydramnios the existence of fetal abnormality.

5. Toxemia (eclampsia and preeclampsia): Again quoting Dieckmann[1] "the best treatment for toxemia is the termination of pregnancy." Both conditions require adequate medical treatment before attempting delivery. Rupture of the membranes, provided the cervix is ripe, may be adequate to start labor in the eclamptic patient. If the cervix shows no effacement and dilation, cesarean section may be necessary.

The preeclamptic patient occasionally presents a more difficult problem, this condition frequently occurring several weeks before term. The response to treatment determines the course to follow. These patients frequently respond so well to treatment that it is possible to carry them to near-term. The method of termination of pregnancy then is determined by the condition of the cervix on the one hand, and the condition of the patient and fetus on the other.

6. Labor in patients with organic diseases such as tuberculosis, diabetes mellitus and compensated cardiac disease, should be induced as soon as the cervix is in the proper condition. Under these conditions proper preparation of the patient is possible by hospitalization and adequate study before induction.

Other indications for the induction of labor are noted in the literature on this subject. Most of them are rare conditions seldom encountered by the average physician. For this reason they are not included.

Numerous methods of induction have been used. They have been classified as surgical and medical. The use of bags, bougies, cervical packings, cervical dilators such as the Bossi dilator, and the fingers as manual dilators, is a surgical procedure. Their use carries the risk of cervical laceration and puerperal infection. Excepting for the occasional use of the bag, these methods have been discarded in most maternity centers.[1, 3] Use of the bag is confined chiefly to marginal placenta previa and cord prolapse. Artificial rupture of the membranes should not be classified as a surgical method of induction.

Medical methods of induction consist of the administration of various drugs. Castor oil and quinine are old favorites. Their use, however, is gradually being discontinued. Dieckmann[1] has discontinued their use "as having no value." Grier[2] and numerous others have discontinued the use of quinine because congenital deafness has been demonstrated following its use. The intrauterine use of various chemicals has long been abandoned.

The "priming of the cervix" with estrogen or stilbesterol is still in the experimental stage.

The use of solution of posterior pituitary substance in the hands of the experienced physician is ideal for labor induction. Indiscreet use of this drug is a common observation and frequently leads to induction complications.

Grier[2] uses calcium gluconate to stimulate uterine contractility.

The first procedure of labor induction should be a vaginal examination under aseptic conditions. The condition of the cervix being ideal for induction, the patient is admitted to the hospital. She is given the usual perineal preparation and a cleansing soap suds enemia. An ampule of vitamin K is administered. After the enema has been expelled, a vaginal instillation of one of many types is given (acriflavine and glycerin or merthiolate and glycerin are common types of instillations used). Stripping of the membranes is a debatable procedure; however it is a procedure of value if

done carefully. Rupture of the membranes follows—provided a concealed prolapse of the cord is not present. The fetal heart should be observed for a period of time after the membranes have been ruptured. In the event contractions do not start within an hour or two after rupture of the membranes, the administration of pituitary substance is started.

The first dose of pituitary substance usually is one half minum. After an elapse of from thirty to forty-five minues with no contractions being noted, a second dose of one minum is given. One minum doses may be repeated at thirty to forty-five minute intervals until regular contractions are instituted, however a total of ten minums should be the maximum amount of pituitary substance used. Usually three to five minums are adequate. No form of amnesia-analgesia should be administered until the contractions occur regularly at three to four minute intervals and last at least thirty to forty seconds. Progressive dilation should occur. Nitrous oxide can be used to control the discomfort of the contractions until amnesia-analgesia is effective.

CONCLUSIONS

1. Induction of labor is a major obstetric procedure. Its indiscriminate and unskilled use should be discouraged.

2. Regardless of the methods employed, the artificial termination of labor is accompanied with an increased fetal and maternal morbidity and mortality.

3. There are certain conditions under which the induction of labor is possible and indicated.

4. The use of mechanical or surgical means of dilating the cervix have, for the most part, been discouraged.

5. Convenience as such, for either the patient or physician, is not an indication for induction.

6. Induction of labor is a hospital procedure.

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DISCUSSION

Leo J. Hartnett, M.D., St. Louis: It is a privilege to have the opportunity to discuss Dr. Gibson's paper. The subject is of great interest to all who practice obstetrics.

The desirability for the induction of labor is seen often in the treatment of medical problems associated with pregnancy.

It has been shown repeatedly that medical inductions, i.e., the use of castor oil, enemas and pituitary extract fail unless the patient is about to go into spontaneous labor. However, I do not believe it should be abandoned entirely. When the cervix is "ripe" this method of induction often will suffice. There is evidence, also, that such inductions will hasten the "ripening process."

The surgical methods of inductions carry with them the indications and requirements as outlined by Dr. Gibson. Rupture of the membranes is the method of choice followed by the careful use of pituitary extract. This method of induction should be carried out, however, only by those who are thoroughly familiar with the technic and who are able to cope with any obstetric problem which may result.

The author has outlined well the indications for such a procedure. For marginal placenta previa, when the diagnosis can be established without doubt, artificial rupture of the membranes should be of great value if it will allow the presenting part to engage and act as a tampon against the placental margin. Often this cannot be determined with assurance and in such cases cesarean section is probably a more conservative course of treatment.

It has been my experience and observation that abruptio placenta in any form is a most dangerous obstetric complication. It is dangerous for the mother and often fatal for the baby. When diagnosed and with audible heart tones present and a stage of possible viability reached, the best interests of both mother and child can be served only by immediate delivery. If this cannot be accomplished with ease and safety through the vaginal route immediate cesarean section should be performed. When there is evidence that fetal death has occurred, judgment of the obstetrician is required to conduct the mother through this crisis. If he can be reasonably certain labor will not endanger the mother's life or interfere with future child bearing, a procedure such as artificial rupture of the membranes may be justified.

Dr. Gibson's paper is thorough and interesting. His approach to the problems associated with induction of labor is clear and sound. His conclusions that artificial rupture of the membranes and the judicious use of pituitary extract as probably the best method of induction, if requirements are met, are in accord with the findings of most obstetricians. However, because of the necessity of accurate judgments and the possible attending dangers, I believe it should be considered an important surgical procedure.

Dr. Gibson: I think that Dr. Hartnett has summarized so well there is nothing I could add. The way this paper has been presented, it gives the average practitioner in the rural area the idea that induction of labor is a condition that should be handled only by a specialist in a well organized hospital. I do believe from my experience in rural areas in Missouri that it should not be attempted in the home. I have seen several serious complications attending labor induction in the home, two of which terminated in death of babies and one of them in the death of the mother. I still feel strongly that labor induction is something that should be thought of as serious procedure.

The United States has the reputation of poor obstetrics compared to foreign countries, and I think any time improvement can be made, and particularly on matters of labor induction and unnecessary obstetric procedures, the percentage will be lowered.

PHYSICIANS NUMBER 199,755, A. M. A. BUREAU FINDS

The Bureau of Medical Economic Research of the American Medical Association estimates that there were 199,755 physicians in the United States as of June 1, 1948.

Frank G. Dickinson, Ph.D., director of the Bureau, says in an article which appears in the August 21 issue of *The Journal of the American Medical Association* that this number is 17 per cent greater than the 170,163 physicians shown in the 1940 American Medical Association Directory. The population of the United States has increased only 12 per cent since 1940, he points out.

THE RELATIVE IMPORTANCE OF THE RH FACTOR IN OBSTETRICS

MATTHEW W. WEIS, M.D., *St. Louis*

SINCE THE demonstration of the Rh factor in human blood by Landsteiner and Weiner, medical literature has contained many reports regarding its importance in the field of medicine. It is not the purpose of this paper to add startling information to what has heretofore been written but, rather, to present some of my personal observations of the Rh factor as it applies to obstetrics and, subsequently, to the newborn infant. The result of this study may, I think, help to formulate a routine for the proper management of these cases. Furthermore, it may tend to reduce the unwarranted anxiety of the expectant mothers, an anxiety induced by the widespread publicity given the Rh factor in the past.

In 1945 I felt that the importance of the Rh factor should be evaluated from the standpoint of the obstetric patient and her expected child. It was difficult to agree with some of the ideas which were prevalent at the time, such as early induction of labor, cesarean section and, even in some instances, the prevention of conception. It was endeavored to make the study on cases over which there was absolute control and which were under direct personal observation. Perhaps it is well here to pay high tribute to the patients. Not a single one refused to cooperate in this work. The laboratory tests were made under the direction of Hollis N. Allen, M.D., and the routine for the newborn was set up with the excellent advice of Peter Danis, M.D.

Early in the work an effort was made to determine, routinely, the Rh factor of both the mother and the father but as the work progressed it was decided that the father should be tested only when the mother was Rh negative; if he were also negative, it was felt that there was no need to be concerned with erythroblastosis fetalis in this particular combination. However, if the father should be Rh positive while the mother was Rh negative, it served as a warning for possible future trouble.

Several points were of importance in taking the obstetric history, such as the number of the present pregnancy, whether or not there had been previous miscarriages or stillborn infants or, if the patient had recieved blood by transfusion, intramuscular injection or intraperitoneal injection. This was necessary to establish a basis for determination of possible previous sensitization. (Only one patient had a previous blood transfusion and she was Rh positive.)

The material for study was selected from 1,096 consecutive pregnancies. Here were found 184 Rh negative women (16 per cent plus). The next step was to remove from the Rh negative group those cases in which the Rh factor of both parents was negative, this number being thirteen. Further, those Rh negative cases who were experiencing their first pregnancy were removed. This left a total of seventy-six patients to be studied and observed for possible effect on the infant.

Table 1. *Gravid State*

Grav. II	*Grav. III*	*Grav. IV*	*Grav. V*	*Grav. VI*	*Total*
47	19	5	4	1	76

Next these cases were investigated as to previous stillborn children from all causes and at which pregnancy the stillborn occurred.

Table 2. *Previous Stillborn*

1st Preg.	*2nd Preg.*	*3rd Preg.*	*4th Preg.*	*5th Preg.*	*Total*
2	3	1	0	1	7

An attempt was made to determine the number of stillbirths which were due to erythroblastosis fetalis. This was difficult because of the absence of autopsy reports, the only basis being the report of clinical and gross findings at time of delivery. The following table is presented.

Table 3. *Possible Stillborn Due to Erythroblastosis*

1st Preg.	*2nd Preg.*	*3rd Preg.*	*4th Preg.*	*5th Preg.*	*Total*
0	3	1	0	1	5

When table 2 is compared with table 3 it is found that five of the seven reported stillbirths possibly were due to erythroblastosis fetalis.

An interesting factor which was taken into consideration was the incidence of spontaneous abortion. In this group of seventy-six patients, which showed a total of 197 previous pregnancies, there was a history of only fourteen miscarriages. This percentage (7 per cent plus) compares favorably with generally accepted statistics; in fact, it is less than many figures quoted by authors who based their findings on surveys not limited to Rh negative mothers.

Table 4. *Spontaneous Abortions*

1st Preg.	*2nd Preg.*	*3rd Preg.*	*4th Preg.*	*Total*
10	1	2	1	14

The usual prenatal routine was carried out in this series. This included serology, the various blood counts such as red blood count, hemoglobin determination, hematocrit determination, white blood count and differential. The blood pressure and urine were checked at regular intervals. In all cases the serology was negative for syphilis. The incidence of the so-called anemia of pregnancy was average. There was no evidence of kidney disease nor were any toxemias of pregnancy noted. Early in the work the conglutination test was made only in the latter part of the pregnancy. As we progressed, the examination for antibodies was made on the first visit to inform us as to whether or not

the previous pregnancy or pregnancies had sensitized the patient. Regardless of the outcome of these tests, they were again repeated from the thirty-second week to term at intervals of ten to fourteen days. It is unfortunate that in those cases in which the conglutination test was found to be positive the benefit of the test early in pregnancy was not had.

Table 5. *Positive Conglutination Test*

2nd Preg.	3rd Preg.	4th Preg.	5th Preg.	6th Preg.	Total
2	3	0	1	1	7

It is interesting to note that while a total of seven cases showed a positive conglutination test only three of these had babies with erythroblastosis fetalis; two of the cases were in the third pregnancy and the remaining case in the sixth pregnancy. In all the cases of erythroblastosis fetalis in this series, the mother showed positive conglutination test.

The management of the last trimester of the pregnancy and of the labor was the same as for any pregnancy regardless of the Rh factor. Complications were treated in the same manner. It was not thought wise to induce labor early (before the 38th week) and thereby have the problem of the care of the premature infant along with possible erythroblastosis fetalis. One of the cases came to cesarean section because of prolapsed cord, no cervical dilatation and fetal embarrassment due to pressure of an impacting shoulder. This was an obstetric complication and was not done because of Rh factor complication. Another patient was delivered by cesarean section because of a moderately contracted pelvis with the breech presenting. She had lost a baby previously because of the same presentation. Here, again, we considered the obstetric condition and not the Rh factor.

Immediately after the birth of the infant it was examined carefully for any sign of edema or for external indications of anemia. It is common knowledge that erythroblastosis fetalis may be manifested in three ways: the anemic, the edematous and the icteric type. If no gross findings of a suspicious nature were present the laboratory procedures were then initiated. These consisted mainly of daily red blood count, hemoglobin determination and the examination of blood smears for an abnormal number of erythroblasts. These procedures were carried out for at least seven days in order to aid in discovering any late signs of erythroblastosis fetalis. In the series all findings in the cases of erythroblastosis fetalis were in evidence before the fourth day. At all times everything was in position to start immediate blood transfusions if necessary, having at hand group 0 blood ready for use. In this series there were no infants which showed immediate embarrassment, consequently no transfusions were given in the delivery room or immediately after birth.

It was also comforting to know that should a moderately severe or severe postpartum hemorrhage occur, all was in a position to transfuse the mother because information regarding her Rh factor as well as her blood type or group was known. I think that this is of importance and should be made routine as far as possible.

There were three cases of erythroblastosis fetalis in this series. The following table shows at which pregnancy they occurred.

Table 6. *Erythroblastosis Fetalis*

2nd Preg.	3rd Preg.	4th Preg.	5th Preg.	6th Preg.	Total
0	2	0	0	1	3

Two of these infants survived and are well. The third died in spite of early and thorough treatment. One of the cases that survived was the child of a mother in which the conglutination test was 1:8. The other child who survived was delivered by a mother in which the conglutination test was 1:250. The baby who succumbed was the child of a mother whose conglutination test was also 1:250.

The question has been raised, "Should the Rh negative wife with an Rh positive husband attempt to have children?" I see no reason why they should not. The first pregnancy, barring any unusual misfortune, should be successful and even in this series of seventy-six cases all mothers have one or more living children, two of them having given birth to a normal child after having had a child who had developed erythroblastosis fetalis.

SUMMARY AND CONCLUSIONS

The careful screening of 1,096 consecutive patients left seventy-six cases for study regarding the importance of the Rh factor in obstetrics. These cases were under routine prenatal observation with added laboratory tests as stated earlier in the paper. All have been delivered for at least three months. There were no maternal deaths and there was one infant death due to erythroblastosis fetalis. It is encouraging to note the occurrence of only one death in 1,096 cases due to erythroblastosis fetalis. It is further encouraging to note this one death in the seventy-six cases in which higher incidence might be expected. The following conclusions may be of importance.

CONCLUSIONS

1. The Rh factor should be determined in all pregnant women so that one may be alerted to possible future danger as regards the infant; also to aid in the rapid administration of blood to the mother in case of shock or hemorrhage.

2. The incidence of Rh negative mothers was 16 per cent plus.

3. The Rh factor had no apparent effect on the incidence of spontaneous abortion. The incidence in this series compares favorably with the generally accepted average.

4. Tests for antibodies should be made in all Rh negative pregnancies in which a previous pregnancy has existed or in which the patient has received blood.

5. The management of the labor and pregnancy should be the same as for any pregnancy regardless of the Rh factor.

6. The infant should be watched carefully and

tested for erythroblastosis fetalis for at least five days.

7. Group 0 blood should be available at all times for immediate transfusion should the necessity arise.

The attending physician should make a definite effort to assure the expectant mother that, even though she be in the Rh negative group, the possibility of a disastrous pregnancy is in a low percentage bracket. Contributions to the literature have shown that erythroblastosis fetalis is not the most frequent cause of neonatal death. I believe it is a duty to help allay the hysteria which was caused several years ago by the unwarranted publicity given to this particular condition.

634 N. Grand.

DISCUSSION

PETER G. DANIS, M.D.: Dr. Weis has presented a paper that contains rather pertinent observations from the obstetric point of view on the importance of the Rh factor. This importance is directly related to the baby and, of course, as a result is of distinct interest to the pediatrician. This study of Dr. Weis' represents a great deal of individual effort on his part to gather correctly statistics to evaluate much of the information that has been given on a national scale. It is interesting, as it has always been in the past, to realize that so frequently good judgment clinically and knowledge are rarely disturbed by new scientific information, especially when all the facts are in. Certainly this is being proven constantly in relationship to this particular condition known as erythroblastosis fetalis in the newborn.

Time does not permit the extensive discussion that might be of interest on this particular subject. I would like to emphasize, however, some particular points that Dr. Weis has made as they are directly related to the baby. First, prematurity is a real complication in this disease. In the few cases that I have seen in which prematurity has been superimposed on the disease, the fatality has been greatly increased. This also has been the observation of some of the prominent physicians in the field who previously had advocated early induction and even cesarean section. One particular prominent physician suggested that a baby might safely be brought at the thirty-eighth to the thirty-ninth week; at the same time he admitted that those he had seen brought in the thirty-seventh week had been lost. Now particularly the general practitioner can appreciate how difficult it would be to evaluate positively whether the mother was in the thirty-seventh or in the thirty-eighth week.

This disease has two fatal forms as far as the outlook for the baby is concerned. One of these is primary hydrops and the other is the complication known as kernicterus. Of course, the latter is not fatal immediately but eventually results in a worthless, useless child. I regret to report that regardless of all of the work that has been done on this subject in the last five or six years no one has come close to doing anything for either of these types of cases. A great deal of hope developed when the so-called exsanguination transfusion was first used. However, Dr. Louis Diamond, the originator, told me recently that he found that after evaluating the incidence of kernicterus in his cases there have been no reductions as the result of the exsanguination transfusion. No one, even with early delivery, or other heroic measures, can save the baby with true hydrops.

In erythroblastosis fetalis, from the information available at the present time, it seems correct to state that one might judge the severity by the heighth of the erythroblast count during the first day of life. These babies develop severe anemia rather rapidly but, from the statistics now available, it does not seem that, in spite of this rapid development of anemia, it makes a great deal of difference whether they receive the blood the first hour of life or within the first ten hours of life as far as the final satisfactory outcome is concerned. This being true, it would seem that the exsanguination transfusion, which is a formidable procedure in the hands of those who do not have the opportunity to do it every day in the year, is not necessary and is not influencing the fatality of the disease and, therefore, as far as the average man in the state would be concerned hardly indicated in any case. It does, however, seem to increase the rate of recovery so that the mother may be able to take her baby home with her instead of leaving it in the hospital for another week or two.

Since there are no specific substances to prevent or treat the disease one might say that the treatment is supportive. For years liver damage has been recognized as one of the problems of the course of the disease. Consequently, it is quite important to administer glucose, liver extract and elixir choline, which support and stimulate liver function. This is quite as important as to supply blood. The indication for the blood is in a sense that of anemia, and any type which matches the baby's can be used. There are sufficient statistics today all over the country to demonstrate that there is no great difference in the effectiveness of Rh negative blood over Rh positive blood, or vice versa. It does not mean then, that a baby should be negelected because the right type of Rh blood is not available. There is one type of case which probably is seen more frequently than any other; that is the type in which there is extreme jaundice but little change in the blood picture during the first two or three days of life. The question arises whether or not transfusions should be given immediately in these cases There is always the possibility of producing a greater load on the liver, which might be harmful, by the excessive amount of blood. On the other hand, there have been more recent impressions that possibly it should be given because what may represent a good blood count in that baby may be nothing more than a hemoconcentration as a result of loss of fluid volume. It would seem to me that forcing glucose water and other fluids and close observation of the blood counts in the baby thereafter would be of value in deciding this point.

HOLLIS N. ALLEN, St. Louis: I do not believe this is the place to go into the pathologic problems of the Rh factor. It might suffice to say that there are three main antigens connected with it and which are known in this country at the present time as the RHO, the RH'1 and RH'2, and associated with these are somewhere near a dozen other factors in which there is interest at the present time. None of the factor, however, is of apparently high enough antigenic value to be of any particular significance in erythroblastosis fetalis.

The factor that is of most interest and the factor that is meant usually is the RHO, which is present in about 85 per cent of all individuals. The antigenic properties of RHO are rather low but seem to be much higher in antigenic property than RH'1 or RH'2 or the various

other factors which are associated with them such as the Rh factors.

It is my belief that in the next few years the American nomenclature will be done away with and the British nomenclature used which is much more understandable than all of the various combinations of the Rh prime one and two which are designated in this country.

The technical difficulties of doing an Rh determination are not great. It should be available easily to all individuals in any hospital that boasts of a laboratory or technician or any supervision of the laboratory. Its importance, of course, goes beyond the study of erythroblastosis and in obstetrics is important because an Rh negative mother who has been sensitized by an Rh positive baby offers a great risk in the transfusion of blood from an Rh positive donor.

I want to emphasize at the same time that one should not be hysterical about this particular factor and I do not believe that a patient should be allowed to die from hemorrhage because the Rh negative blood is not available. I think that that has been done in the past. I think it important in any well run hospital that Rh negative blood be available; but I have seen several people whom I thought were lost because Rh negative blood was not given or could not be obtained and no blood was given.

It is certainly nice for the obstetrician to have all of these facts at his command because the running of an Rh factor accurately takes some time and delays blood transfusion in the mother or the baby.

I want to stress particularly Dr. Weis' point about the hysteria about the Rh factor and the figures he gave are a little bit higher in the mortality rates than the over-all figures at St. John's Hospital. Three patients have been lost there from erythroblastosis fetalis itself, which gives a low percentage rate and certainly too low to warrant all of the lay publicity that has been given this in the last number of years.

I want, not necessarily to stress the fact, but to point out that erythroblastosis fetalis is not exclusively due to an Rh factor. There was a patient at St. John's who delivered twins, the mother being a type 0, one of the twins a type 0 and the second a type A. The type A baby gave the typical clinical findings of erythroblastosis fetalis. In titrating the mother's blood it was found that her anti A antibody instead of being the average 1:64 was as high as 1:250. It is probable, however, that some 90 per cent of all erythroblastosis fetalis cases are due to sensitization of the Rh factor.

I am not at all rabid about this factor and want to stress the point particularly that the patient should be given blood; and in those series of cases in which Rh positive and negative blood has been given, no information has been gained as to which is the best and I do not believe that it is of any great importance.

Now, another controversy that has arisen in the treatment of erythroblastotic babies is when to give blood to the baby. The case that I have learned to dread is not the anemic child, but the one that has a red count of between four and six million and is extremely jaundiced.

In my experience all three cases that were lost at St. John's Hospital in the last 6,000 deliveries have been of this type. The anemic babies are usually easy to treat and a few blood transfusions suffice. In the past there has been hesitancy in transfusing those babies that have a high red count. However, in those babies transfused that had a high count, it has been rather startling to note that with moderate transfusions the red count goes down to maybe two and a half or three million. In most of these cases the jaundice clears up at the same time.

So the apparent loss of blood in these instances could not be due to the destruction of blood by the antibody. It is my contention at the present time, a thing that is difficult to prove, that in these individuals with the high count and the marked icterus, there is a compensatory concentration of the blood in the individual so that the total amount of blood, even though the red count is high, may be tremendously low and those patients, in a rather short experience, are benefited by transfusion and it is the policy at the present time to start any baby on transfusion that shows evidence of erythroblastosis in spite of a high count. The diagnosis of erythroblastosis probably should not wait absolute confirmation. It is a little bit difficult in my mind to distinguish sometimes between what might be a so-called physiologic jaundice of infancy and erythroblastosis. However, I think that any patient whose mother is an Rh negative and whose father is an Rh positive and who becomes jaundiced should be considered an erythroblastotic baby and treated on that basis. The finding of erythroblasts in the blood smear is not diagnostic. The average normal baby has in the blood smear upward to 1 per cent, in many instances more, of erythroblasts, although the baby may be perfectly normal. The finding of erythroblasts in the smear is not diagnostic of erythroblastosis fetalis.

I want to stress the other item that Dr. Danis brought out in the relationship of kernicterus to the actual icterus of the baby. I do not feel at the present time that kernicterus is due to the cause which gave it its name, that it is not due to the accumulation of bile in the blood stream. It was so designated because certain centers in the brain were found to contain bile at autopsy in the patients who died with kernicterus. It is now the belief that those centers were degenerated originally which allowed them to take up bile and that the icterus itself was a secondary factor rather than the causative factor of the degeneration.

Wm. F. Mengert, M.D., Dallas: You have been fortunate to hear an excellent discussion on the subject of erythroblastosis. I have only a few things to add.

First, a little history. Mauriceau in the 18th century recognized hydrops fetalis. Icterus gravis has been recognized for many years. In the latter part of the 19th century Ballantyne collected a whole series of patients with hydrops fetalis. In the early part of the 1930's these diseases, three hitherto unrelated clinical phenomena, hydrops, icterus gravis and anemia were assembled together because they had the common pathologic feature of erythroblastosis. Just remember this history. There is nothing new about erythroblastosis except theories or rather facts as to its origin. The disease has always been with us.

I was interested to hear Dr. Allen mention the figure of three infant deaths in six thousand, because that is exactly the figure we have from the Buchanan blood bank in Dallas; namely, one infant death in two thousand deliveries. Certainly this is not something to make us go into a tailspin concerning the subject of erythroblastosis.

Regarding the induction of labor, Philpott of Canada was one of the first to give a critical level of approximately one in a hundred to the titer. He stressed the

fact that has been stressed here this morning, that if an infant has a titer higher than that, there is not much to do about it, even with induction of labor, because the infant is going to have erythroblastosis and in addition one has an immature infant; whereas if the titer is lower than that the chances are the infant will be born alive. The three clinical manifestations, hydrops, icterus and anmeia are merely indications of the severity of the immune reaction built up in the mother. If it is severe, the baby will be born with hydrops and is going to die. An occasional infant born alive with icterus will be benefited by exsanguination transfusion, but that is pretty heroic stuff.

I would like to present this one caution finally, that I think where we must concentrate our thoughts on erythroblastosis is not in the pregnant woman, but in the young girl who is Rh negative and who because of an automobile accident or something else gets a blood transfusion. Let us not give her Rh positive blood, because then we are putting in the millions of red blood cells that accompany 500 cc. of blood and are producing a terrific immune reaction in that girl. If she does subsequently marry an Rh positive man, her chances of having a live baby are not good. In other words, the total quantity of red blood cells from a blood transfusion induce an immunologic reaction so much greater than the few blood cells that escape from the baby in utero into the maternal circulation that I believe that is a more important consideration in this whole topic than what to do with the patient after she is pregnant.

TYPE b, HEMOPHILUS INFLUENZAE MENINGITIS

REPORT OF CASES

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DELAY AND INADEQUACY of treatment of type b, H. influenzae meningitis are two of the most important factors in the death and sequelae rates of this disease. The time of starting treatment is not always controlled by the physician, but adequacy of treatment is his full responsibility. This report deals with a series of eighteen cases in which, excluding two cases in which death occurred within five hours of the time of admission, the mortality rate was 6.3 per cent. The report is a review of the results of treatment of type b, Hemophilus influenzae meningitis at Denver Children's Hospital during the six year period concluded December 31, 1946. A comprehensive review of the extremely voluminous medical literature dealing with H. influenzae meningitis is not intended.

Influenzal meningitis is ranked third to fifth in frequency of all meningitides and until 1936 is recorded as almost 100 per cent fatal in children of all ages. In children less than 2 years of age, 80 per cent of the meningitides reported are caused by H. influenzae.[1] Hertzog,[2] in a ten year (1935 to 1945) survey of 25,097 necropsies enumerated 377 cases of meningitis. One hundred and forty-nine of these occurred in children less than 3 years of age. H. influenzae was the responsible organism in 39, or 26 per cent, of the 149 unselected cases of meningitis coming to necropsy.

This form of meningitis generally is considered to be a noncontagious and sporadic disease of infancy, but it is well known that the incidence is seasonal and varies with upper respiratory tract infections caused by H. influenzae. Hertzog et al[3] suggest that because of the high incidence in children, adults may be relatively immune. Although the manner of transmission and the incubation period have not been established definitely it is known that upper respiratory tract infection and bacteremia antecede the meningitis in a high percentage of cases.

The date 1936 is taken as the opening of the new therapeutic era—the miracle drug age—with sulfonamides, penicillin and streptomycin making their appearance in order. With the advent of chemotherapy the mortality rate of influenzal meningitis has been reduced markedly. However, it has been reported by Birdsong et al[4] that the mortality rate, even with chemotherapy, varied from 65 to 100 per cent prior to the use of the type specific antiserum. Other reports of the use of sulfa drug therapy alone have given mortality rates as low as 30 per cent.[5] The death rate is still high and complications and sequelae are common because of several factors, some of which are: (1) Low resistance in infancy and early childhood: This disease is reported to occur most frequently in young children. The mortality rate is high in this age group possibly because of lower resistance and lack of specific immunity. (2) Delay in diagnosis: Inability of the infant to manifest signs recognizable clinically as indicative of meningeal irritation may result in a prolonged and serious delay. During this delay the infection may become established behind fibrinous barriers which modify the effectiveness of treatment and contribute to the frequency of the occurrence of subarachnoid blocks. (3) Inadequate treatment of antecedent infections: Antecedent infections often are considered lightly by the parents and physician alike. If the possibility of meningitis is overlooked, inadequate dosage of chemotherapeutic agents may result in holding the infection in abeyance while a basilar form of meningitis becomes established. At the same time the resist-

An analysis of eighteen cases treated with sulfonamides and type specific antiserum with notes on five additional cases in which streptomycin was added to the therapeutic regimen.

From the Denver Children's Hospital, Denver, Colorado.

ance of the organism to the drug may increase. The basilar form of this disease is notorious for its complications and sequelae. (4) Unrecognized bacteremia: This component often precedes the onset of meningitis and may add to the severity of the disease. Hemophilus influenzae bacteremia also may be treated as a fever of undetermined origin with chemotherapy which is adequate to control the symptoms and reduce the fever to normal but possibly may be inadequate in dosage and duration or duration to prevent seeding of the meninges with viable organisms.

Detection of meningitis in infants, particularly those less than 8 months of age, requires constant vigilance because of the frequent paucity of recognizable signs of early meningeal irritation. Any child presenting vomiting of unexplained origin, unexplained fever, marked restlessness and irritability alternating with drowsiness, should have a spinal puncture and careful spinal fluid examination. Brennemann[1] states that a physical sign too often overlooked by those who have the modern laboratory at hand is the patent and bulging anterior fontanelle, a definite guide to increased intracranial pressure. These infants also should have spinal fluid examinations carried out immediately. Frequently, the appearance of the classical stiff neck, the Kernig, Brudzinski or Babinski signs are delayed and may appear only after the meningitis has become well established.

Recent reports indicate that the mortality rate is highest under 7 months of age; that the highest incidence occurs during the season of upper respiratory tract infections, and that best results follow early diagnosis and vigorous therapy.[6]

During the last six years eighteen cases of type b, H. influenzae meningitis have been observed in Denver Children's hospital; nine occurred in males and nine in females. Each was diagnosed bacteriologically by either direct spinal fluid smear and Quellung reaction, blood and spinal fluid culture or spinal fluid culture. Of this group fifteen recovered (83 per cent). Of the three who died, two were acute fulminating cases of twenty-four hours duration, and both patients died within five hours after admission. Excluding these two cases which were not considered to be treated, the recovery rate is 93.7 per cent. The other death occurred in a child who had a prolonged course and was treated with various agents and methods including sulfonamides, type specific antiserum and extensive subarachnoidal drainage. During the seventeen day hospitalization period lumbar punctures were performed two or three times daily.

Of the recovered cases, eleven ranged in age from 3 months to 2 years, two from 2 to 5 years and two were older than 5 years. Two of the fatalities occurred in patients between 3 and 5 years of age and the other fatal case was 15 months old and two were females and one was a male (table 1). The recovery rate in the infancy group is striking and is not in accord with usual reported experiences (Smith et al,[7] Sako et al[8] and Knouf et al[9]). The group, however, is small and not statistically significant.

Table 1

Age	Number	Died	Recovered
0-3 months	1	0	1
3-6 months	1	0	1
6-12 months	3	0	3
12-24 months	7	1*	6
2-5 years	4	2**	2
5 years and over	2	0	2
Total	18	3	15

* This case died within 5 hours of admittance to the hospital and is considered untreated.

** One of these cases died within 5 hours of admittance to the hospital and is considered untreated.

Fourteen cases were admitted in the "common cold" season, from November through April; four cases entered during the summer months, June through August. Two of the three fatalities were in the former group. Hospitalization periods were shorter for the group in the upper respiratory infection season, averaging twenty-eight days per patient; those cases occurring during the summer months required approximately twenty days more hospitalization per patient.

LABORATORY DATA

Recently, Edmonds and Neter[10] have reported that the blood culture is positive in more than 75 per cent of all cases of type b H. influenzae meningitis. Of the six cases in this series who had blood cultures examined, three were positive and three were sterile. The spinal fluid smear was positive in all eighteen cases (100 per cent) and this was checked by the Quellung phenomenon. The spinal fluid cultures were positive in fifteen cases (83 per cent). Two of the remaining three cases, all of whom recovered, were treated with sulfadiazine prior to admission to this hospital; possibly this was responsible for the failure to obtain positive cultures. The third case had consistently negative cultures throughout the period of hospitalization.

All who have dealt with the prognostic and therapeutic problems in this disease have stressed the importance of the spinal fluid dextrose level at the time of the first examination. It has served as a prognostic guide for Edmonds and Neter[10] and Alexander et al.[11] They feel that patients presenting an initial spinal fluid sugar below 20 mg. per cent have an unfavorable prognosis, regardless of their clinical status. Alexander et al[12] believe that a level below 10 mg. per cent indicates a grave prognosis. In part, this correlates with our findings as two of our fatal cases had no detectable sugar in the spinal fluid at the time of admission; the other fatality showed 25 mg. per cent of sugar on admission. This patient died because of a complicating subarachnoidal block. Of the fifteen recoveries, seven cases showed a spinal fluid glucose below 20 mg. per cent, averaging 8.6 mg. per cent. Eight patients had a spinal fluid sugar greater than 20 mg. per cent on the first examination.

The spinal fluid protein in influenzal meningitis is elevated. One of our fatal cases had a spinal fluid protein level of 400 mg. per cent on the initial examination and this was also the maximum level attained. The two other cases died within five hours of admission and had only one protein determination each—in one the concentration was 408 mg. per cent and in the other 64 mg. per cent. Those recovering averaged considerably less—99 mg. per cent. The protein gradually returned to normal in the fifteen recovered cases. All were normal at the time of discharge.

The initial spinal fluid cell count ranged from 590 cells to 96,400 cells and in each case more than 85 per cent of the cells present were polymorphonuclears. In those patients who recovered, the decline of pleocytosis paralleled the clinical response except in those cases in which relapse was experienced. At the time of discharge the cell counts were normal or slightly elevated—higher than normal counts were obtained in nine cases, the range being from 17 to 66 cells with a predominance of lymphocytes in each case.

Frequent spinal punctures have been advocated in this disease, either as a therapeutic procedure in itself or as a method of determining the effectiveness of medical treatment. Knouf et al[9] as late as 1942, recommend frequent spinal fluid examinations. They favor daily examinations, or examinations every other day, until the temperature is normal. During the subsequent two week period, while the patient is receiving sulfonamides, though clinically well and afebrile, they advise frequent examinations. It is stressed by these workers that while a patient may be improved clinically and afebrile, a daily lumbar puncture may show a change in the spinal fluid, indicating a pending relapse. Adequate treatment of relapses is started earlier by using this program. This is borne out in three of our cases who had relapses. In each case the relapse was first detected by spinal fluid examinations. These responded well to sulfonamides and antiserum, but required periods of treatment longer than the average. Spinal drainage as a therapeutic measure itself was used in this series in only one case (one of the fatalities). The average number of spinal punctures per patient in the whole series was seven. No cisternal punctures were performed.

Other laboratory procedures revealed an average hemoglobin of 10.5 gm. (Haden-Hauser); red blood corpuscles averaged 4 million per cu. mm.; the white blood cells 20,000 per cu. mm.; and granulocytosis varied from 60 to 80 per cent. The urine in all cases was essentially normal on admission; however, chemically positive tests for blood or frank hematuria developed subsequently in twelve cases (70 per cent) and sulfa crystals were present in nine cases (53 per cent).

TREATMENT

Although many therapeutic procedures have been used in this type of meningitis, no reduction in the mortality rate was effected until the sulfonamides were used. Further progress became apparent when Alexander published her work with the type specific antiserum. The therapeutic agents used in our series included the sulfonamides, penicillin and type specific rabbit antiserum. Penicillin was used, without demonstrable effect, in conjunction with sulfadiazine therapy and antisera in seven cases. The use of this agent was dropped when its ineffectiveness was demonstrated. Sulfadiazine was used in seventeen of the eighteen cases. The only case in which it was not used was the first in the series and this case, a fatality, received sulfanilamide and sulfapyradine, plus antiserum. The initial dosage of sulfadiazine was 2 grains per pound of body weight per twenty-four hours. It was given orally, subcutaneously or intravenously (in 5 per cent concentration of the sodium salt), or by a combination of these routes. The drug therapy was started within from three to five hours subsequent to admission and was continued at high blood levels (15 mg. per 100 cc.) for an average of twenty-three days. An attempt was made to continue the therapeutic blood levels for three weeks following sterilization of the spinal fluid and for two weeks following return of the spinal fluid sugar to normal. This was followed by another week of sulfadiazine therapy in dosage sufficient to maintain a 6 to 8 mg. per 100 cc. blood level.

The concentration of the free drug in the blood was determined on the second hospital day and was found to average 14 mg. per cent—an effective level according to Alexander,[13] Sako et al,[5] Davis[14] and North.[15] This approximate blood level was maintained as indicated in all except seven cases in which it was necessary to reduce the dosage or discontinue the drug temporarily because of hematuria. The range of sulfadiazine blood levels in the eighteen cases varied from 4 to 50 mg. per cent. On the one occasion in which it was determined in the spinal fluid, it was found at a level of 3 mg. per cent as compared with a blood level in this patient on the same day of 10 mg. per cent.

One of our cases was treated with sulfadiazine alone during a hospital course of thirty-seven days and recovered.

Six patients received small transfusions of whole blood for anemia which developed during the course of the illness. The part the high blood levels of sulfadiazine may have played in the development of the anemia is undetermined.

Streptomycin was not used in any case in the series. Since the series was completed, however, 5 proven cases of type b, H. influenzae meningitis have been treated successfully. Two of these received streptomycin and sulfadiazine concurrently, and three had simultaneous treatment with streptomycin, sulfadiazine and type specific rabbit serum.

SERUM THERAPY

Based on Birdsong's statement[4] that the mortality rate in this disease varied from 65 to 100 per cent before the use of type specific antiserum, it

is probable that serum therapy played a major role in the high survival rate in this series. It should be pointed out, however, that streptomycin was not used in this group of cases and that the place which this antibiotic will make for itself in the treatment of influenzal meningitis is in the stage of determination the country over. It is also true that sulfadiazine was given a trial as the only antibacterial agent in only one case of the series. This case recovered.

Several attempts have been made to gauge the dosage of serum necessary. Judging from the experience with one case in this series, the failure of the patient's serum to develop a positive Quellung reaction after serum therapy does not necessarily have prognostic significance. It is to be remembered that the patients were receiving both sulfadiazine and serum. In eight cases, the patient's serum Quellung reaction, after antiserum administration, was positive. In three cases there was a reversal following serum therapy from an initial positive Quellung reaction induced by the patient's serum to a negative. In two of these three cases a return to a positive Quellung reaction was obtained with further administration of serum; in the other case no additional serum was given and the serum Quellung reaction remained persistently negative. All three patients recovered (table 2). The initial

Table 2. *Antiserum*

	0-100 mg.	101-200 mg.	200 mg. +
Recoveries	11	4	0
Fatalities	0	1	0

Total cases receiving antiserum = 15
Treated with sulfadiazine alone = 1 case—Recovered

dose of type specific antiserum varied from 50 to 75 mg. in the fifteen patients who received it. The antiserum was started intravenously within from eighteen to thirty hours after admission and after the diagnosis was established bacteriologically. Additional serum given within seventy-two hours of the initial dose was administered in nine cases in an average dosage of 50 mg. None of our cases received the serum intrathecally and only one patient had the serum administered intramuscularly. Alexander[13] advocates the use of 25 mg. of serum intrathecally forty-eight hours after the initial serum was given intravenously in those cases in which laboratory and clinical signs of improvement fail to develop.

Administration of intravenous fluids preceded the serum therapy in all but three cases. Lactate Ringer's solution or 5 per cent glucose in physiologic saline were the fluids used. In addition to supplying electrolyte and water needs Alexander feels that intravenous fluids serve to decrease the amount of type specific carbohydrate in the blood stream by "washing it out" through the kidneys. Any such decrease in antigen is the same as a dividend of antibody since that amount of type specific serum which is "used up" by antigen free in the blood stream will not be available for action against the carbohydrate in the capsule of the organism.

Intravenous fluids were started at the time of admission after specific calculation based upon the individual patient's requirements for water and electrolyte balance were made. It is necessary that the calculations be made a part of the graphic chart in order that an accurate and ready reference be at hand. Without this, it becomes impossible to make a comparison between the fluid intake and fluid loss, or to have a ready reference to fluids actually taken during each twenty-four hour period. Feeding per stomach tube may have its place, particularly in the patient who has had all sites for intravenous therapy utilized.

COMPLICATIONS AND SEQUELAE

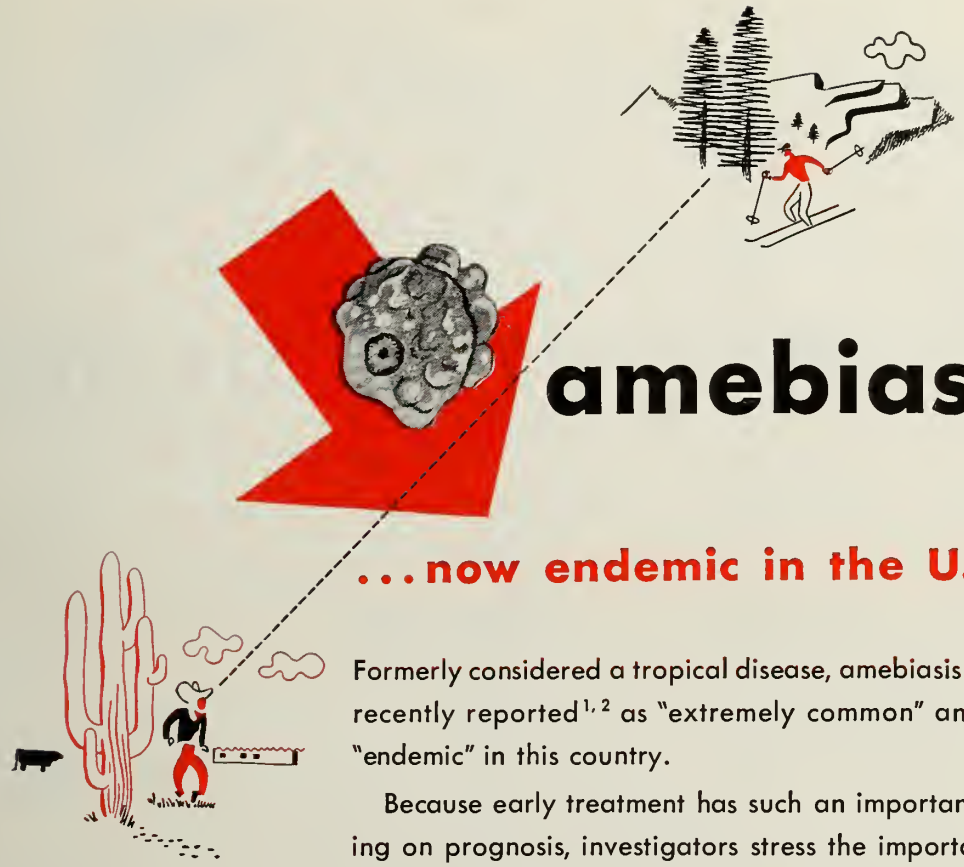
Follow-up reports were obtained from twelve of the fifteen recovered patients. The war time mobile population defeated our attempts to follow the remaining three cases. Complications were uncommon and sequelae rare (table 3). In one patient a periarticular effusion of the left elbow developed and yielded to orthopedic treatment with no noticeable residuum. Two patients, at the time of discharge, showed evidence of muscle weakness. In one, the weakness involving the left arm and left leg has persisted but is not incapacitating; in the other patient the generalized muscle weakness has disappeared entirely. Eighth nerve involvement with disturbance in equilibrium and hearing was evident in another patient; the vestibular disturbance cleared during the convalescent period, but the child remains totally deaf.

DISCUSSION

A well planned program for the diagnosis and treatment of influenzal meningitis is most important. The results of therapy should be expected to vary with the incidence of early diagnosis, the stage of the disease at the time of diagnosis and with the institution of early effective treatment. The effectiveness of therapy is determined largely by the spinal fluid findings. Early sterilization of the spinal fluid, a rise in the spinal fluid sugar and a fall in the spinal fluid protein and cell count are the most significant features. The demonstration of an excess of antibody in the patient's blood serum is helpful. Information of prognostic importance is obtained also by the clinical condition of the patient in relation to the primary infection (if any), bacteremia, development of subarachnoidal blocks and the general state of nutrition and body chemistry.

Almost as many forms of therapy have existed as there are hospitals reporting; however, nearly all the reports since 1940, and prior to experience with streptomycin, indicate that plans of therapy have been modeled after Alexander's experience with type specific antiserum and sulfadiazine used together.

The philosophy of serum therapy[11] is based upon the principle of the establishment in the patient of a quantitative, satisfactory relationship between



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PRACTICE OF ALLERGY

By WARREN T. VAUGHAN, M.D., Richmond, Virginia

Revised by J. HARVEY BLACK, M.D., Dallas, Texas

1092 Pages • 319 Illustrations • Price $15.00

The work of revising "Practice of Allergy," first published in 1939, was interrupted by the death of Dr. Warren T. Vaughan. In carrying through the revision, Dr. J. Harvey Black tried to retain the quality and the flavor of the book so that it might remain as it was written—for it was Dr. Vaughan's distinctive style and personality that make for its greatness and popularity. Dr. Black, however, added considerably new material, bringing the subject matter up to date.

To Mr. O. C. Durham, Chief Botanist in the Abbott Laboratories, Chicago; Technical Director of the Committee on National Pollen Survey, we are indebted for the chapters on Field Surveys and Aerobiology; Development and Technic. Dr. J. B. Howell, Dallas, has rewritten the chapter on Fungus Infection with Associated Allergy, so that it represents the present thinking of the dermatologist and allergist. The Chapter on Vital Capacity has been rewritten by James Holman, Dallas.

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Table 3

Patient	Age	Sex	Admitted Mo. Yr.	Total Hosp. Days	Illness Prior to Admission	Treatment	Complications and Sequelae	Remarks
D.G.	4½ yr.	M	3-41	17	URI 4 da.	Sulfanilamide Sulfapyridine Antiserum	Circulatory collapse and convulsion on ninth day	2-3 lumbar punctures. Died 17th hosp. day
J.M.	3¾ yr.	M	11-42	24	URI 7 da.	Sulfanilamide Sulfadiazine Antiserum	Residual weakness left arm and left leg	Recovered
K.J.	18 mo.	F	11-42	21	URI 3 wk.	Sulfadiazine Antiserum	None	Recovered
B.G.	5½ yr.	F	11-42	21	URI 2 wk.	Sulfadiazine Antiserum	None	Recovered
J.F.	3 mo.	F	2-43	73	URI 2 wk.	Sulfadiazine Antiserum	Relapse after 16 days then treatment started again—57 days No follow up	Recovered
R.B.	6 yr.	M	4-43	22	none	Sulfadiazine Antiserum	None	Recovered
T.T.	16 mo.	M	11-43	37	URI 6 da.	Sulfadiazine, only	No follow up	Recovered
P.R.	33 mo.	F	11-44	4 hr.	URI 7 da	Sulfadiazine Penicillin I.T.	Expired 4 hr. after admission	Died
J.G.	13 mo.	F	12-44	20	URI 4 da	Sulfadiazine Antiserum	None	Recovered
W.D.	19 mo.	M	12-44	25	URI 2-3 da.	Sulfadiazine Antiserum	No follow up	Recovered
M.K.	11 mo.	F	6-45	36	URI 2 wk.	Sulfadiazine Antiserum Penicillin (for 14 da.)	Had arthritis 1 mo. before admission	Recovered
R.M.	10 mo.	M	6-45	57	none	Sulfadiazine Antiserum Penicillin (for 5 da.)	Periarticular effusion of left elbow, cleared	Recovered
K.D.	5½ mo.	M	8-45	49	URI 4 da	Sulfadiazine Antiserum Penicillin (1 I.T. dose prior to bacteriological diagnosis)	None	Recovered
A.B.	3 yr.	F	11-45	17	URI 6 da.	Sulfadiazine Antiserum Penicillin for 2 days	None	Recovered
B.R.	16 mo.	F	12-45	47	none	Sulfadiazine Antiserum (after 3 wk.) Penicillin	Diagnostic problem	Recovered
H.K.	18 mo.	M	3-46	21	URI 3 da.	Sulfadiazine Antiserum Penicillin (for 9 da.)	Generalized weakness, vertigo, which both cleared now 8th nerve deafness	Recovered
T.D.	9 mo.	M	3-46	47	URI 3 da.	Sulfadiazine Antiserum Penicillin (for 15 da.)	Generalized muscle weaknes gradually improved	Recovered
C.W.	15 mo.	F	6-46	4½ hr.	URI 3 wk.	Sulfadiazine Penicillin	Expired 4½ hrs. after admission	Died

the antibody and the antigen. The total antigen in the body fluids plus the quantity of that same substance in the organisms' capsules equals the amount of antigen which must be neutralized by the antibody (type specific antiserum) before recovery ordinarily can occur from serum therapy alone. A direct measure of the antigen content of the blood has not been perfected; but by determining the ability of the patient's serum to cause capsular swelling (Quellung reaction) one can determine if antibody is in excess in the serum. It is desirable that capsular swelling be produced by the patient's serum twelve hours after administration of the antiserum. Cultures of H. influenzae known to form good capsules or the organisms recovered from the patient should be used for the test. For one week following serum administration, it is hoped that a 1:10 dilution of the patient's serum will produce capsular swelling.

Using the spinal fluid glucose as a guide for serum dosage Alexander[11] has devised the following table (table 4) which is widely used. The amount of antiserum given varies with the amount of glucose in the spinal fluid.

It is advocated that the dose of antiserum be given intravenously, within a period not to exceed

Table 4

Spinal Fluid Dextrose	*Antiserum Needed*
0-15 mg. per cent	100 mg.
15-25 mg. per cent	75 mg.
25-40 mg. per cent	50 mg.
40 or more mg. per cent	25 mg.

two hours, in a solution of normal physiologic saline, or in lactate Ringer's solution in an amount calculated to give the patient 10 cc. of the solution per kilogram of body weight; intramuscular injection of serum may prove to be equally effective.

For the mild case, that is, the case in which the initial spinal fluid sugar is in excess of 40 mg. per cent, sulfadiazine alone may suffice. Sako et al[5] reported five recoveries in seven cases treated with sulfadiazine alone irrespective of spinal fluid sugar levels. One of our cases whose initial spinal fluid sugar was 43 mg. per cent was treated successfully with sulfadiazine alone. If sulfadiazine is used alone the blood sulfadiazine probably should be held at a minimum level of 15 mg. per cent and some workers feel that an even higher concentration is desirable. A longer course may be expected, according to Alexander and Leidy,[12] with the exclusive use of sulfadiazine; this was our experience with the single instance of a case so treated (requiring thirty-seven days hospitalization). This longer course may be explained by Alexander's experience in being able to cultivate the organisms from the spinal fluid—when grown on satisfactory culture media—for a period which averaged longer for sulfadiazine cases than for those in which both sulfadiazine and serum were used. This longer period, during which viable organisms could be demonstrated, was noted in spite of clinical and laboratory improvement. The ability of the organism to resist sulfadiazine alone for longer periods also may be related, in certain cases, to the establishment of the chronic basilar form of meningitis with its high incidence of subarchnoidal blocks. This fact of longer resistance of the organism to the drug alone also points up the necessity of maintaining high levels of the drug in the blood. It is probable that a number of cases inadequately treated with sulfonamides, during the bacteremic phase, develop the more chronic form of meningitis in which subarachnoidal block is more apt to occur.

Recently, Alexander et al[16] have written of their experience with streptomycin in the treatment of twenty-five cases of influenzal meningitis. Except for the addition of streptomycin Alexander's former therapeutic regime is followed in all except mild cases. In the latter she is willing to treat with streptomycin alone. The clinical response to this latest of the antibiotics is less rapid than with the antiserum; however, the spinal fluid chemistry returns to normal and sterility of the spinal fluid appears just as early as these changes take place in cases in which antiserum and sulfadiazine are used together.

Recently several reports have appeared in the literature, in addition to Alexander's describing streptomycin therapy as it is applied to this form of meningitis, as well as stressing untoward reactions which have been observed coincident with the administration of streptomycin. The reports are encouraging, in spite of the apparently minor reactions which have been noted by Alexander,[16] Birmingham et al,[17] Nusbaum et al,[18] Hoyne et al[19] and Fowler et al.[20] Each writer has stressed the necessity of the use of adequate amounts of the drug early in the treatment. Twenty thousand units (20 mg.) per pound of body weight administered intramuscularly in divided doses during each twenty-four hour period, and from 25,000 to 50,000 units (depending on the severity) given intrathecally once each day until improvement is manifest, is recommended.

SUMMARY

Fifteen recoveries are reported from a group of eighteen cases of type b H. influenzae meningitis—a survival rate of 83 per cent. When two untreated cases, which expired within five hours of admission, are excluded the survival rate is 93.7 per cent. Treatment was carried out without streptomycin and without the large doses of antiserum usually recommended. Therapy was individualized. The average hospital stay per patient was thirty-one and one-half days—twenty-eight days for those admitted during the winter months and forty-seven days for the summer admissions. The average length of illness at home prior to admission was seven days. Fifteen of the eighteen cases had an upper respiratory tract infection at the time of admission or gave a history of such an infection preceding the onset of meningitis.

Sulfadiazine was administered in accordance with the programs recommended in the majority of published reports and the levels of the free drug in the blood were held at what is considered to be effective levels (15 mg. per cent) for an average of twenty-three days following admission. The amount of antiserum was slightly below the total dosage recommended by Alexander.[11]

Complications were infrequent and significant sequelae were present in only two cases.

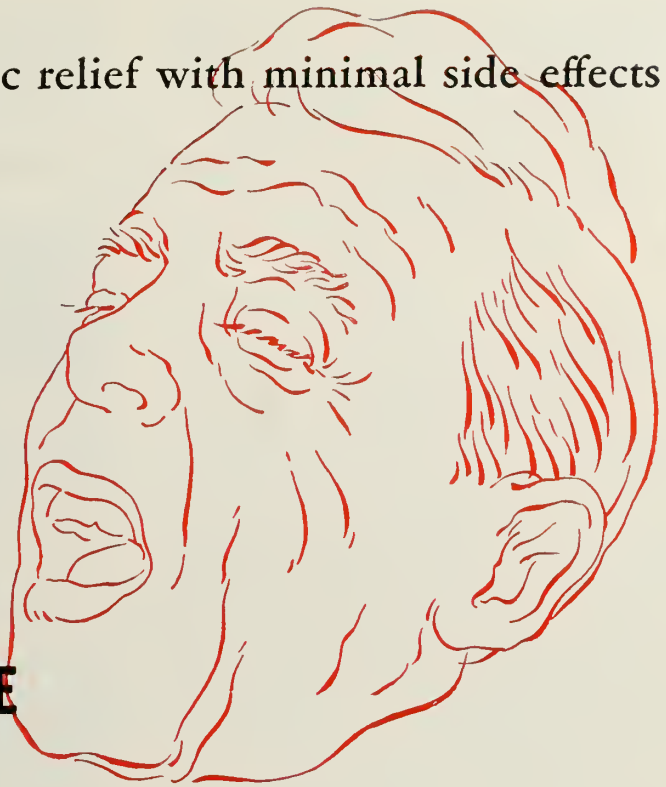
Since the analysis was completed five additional cases, in which streptomycin was added to the therapeutic regimen, have been treated successfully.

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REHABILITATION IN MISSOURI AT THE "GRASS ROOTS"

ROBERT ELMAN, M.D., *St. Louis, Missouri*
AND
HERBERT L. MANTZ, M.D., *Kansas City, Missouri*

Rehabilitation is a relatively new therapeutic term which has achieved rather widespread recognition since the last war. It used to be viewed as applying only to veterans injured during the war, and, or, to those suffering extreme disability in whom only partial restoration was possible. Actually, the term "rehabilitation" may be applied to any patient who is disabled but in whom partial or complete restoration can be effected by all possible means, as medical, surgical, psychiatric, social and vocational. For several years such a complete rehabilitation program has been in operation in Missouri for the care of the civilian disabled. A preliminary report was published in The Journal two years ago.[1] It is the purpose of this report to describe what has happened since then and, especially, to point out that the methods used in this state are based upon medical direction at a local community level. We believe that these two features (a) complete medical supervision, and (b) decentralization are important and unique features of the program which apparently have been emulated by other states.

Historical Survey.—Rehabilitation as a federal-state program first appeared in 1920 when a National Vocational Rehabilitation Act was passed by Congress limited to vocational training plus the provision of appliances such as artificial limbs and hearing aids. This program was administered in most states by the boards of education. As might be expected, the program never became extensive, largely because physical restoration was not provided.

During the last war, when man power was needed acutely, the limitations of a purely vocational rehabilitation program became apparent. It was obvious that rehabilitation required the restoration of various physical and mental defects for which, under the law, no remedial measures could be instituted. To fill this need the Congress in 1943 passed the Barden LaFollette Act (Public Law 113) which added to vocational rehabilitation a program for physical restoration, including also services for the blind and mentally disabled. To provide adequate supervision a medical director from the United States Public Health Service was assigned and a National Professional Advisory Committee formed. It was hoped that full time physicians could be recruited in each state to see that proper procedures for medical restoration would be available.

It was soon apparent that full time physicians as physical restoration officers were difficult if not impossible to obtain. This was true not only in Missouri but in most other states. To meet this need, Dr. Dean Clark, who was then Medical Director of the Rehabilitation Service in Washington suggested to one of us (R.E.) that part time physicians be recruited as medical consultants in order to supervise physical restoration. At the first meeting of the Missouri State Advisory Committee, three excellent physicians were recommended and soon appointed. Since then, three other men have joined this program; each of them supervises the program in his community, including the neighboring territory. All the medical consultants are members in good standing of the Missouri State Medical Association.

The efficiency of this method of regional medical direction at the "grass roots" or community level

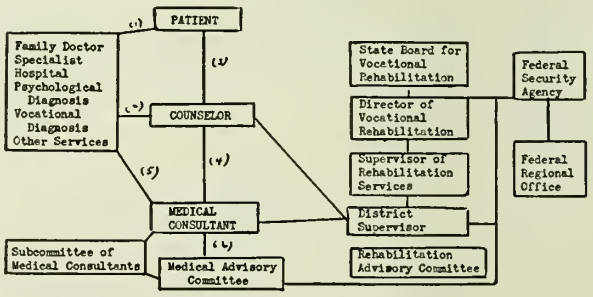


Diagram of Missouri State Rehabilitation Program.

Figs. 1, 2, 3. The relationships by which the patient receives the proper rehabilitation service. Note that the counselor is an integral part of this procedure, acting as an advisor and liaison agent for the patient at all points.

Fig. 4. The counselor is at all times in contact with the local medical consultant. Moreover, at weekly conferences a sufficient time is spent for all cases to be reviewed both initially and during the progress of care. In this way all steps of the rehabilitation program are under constant supervision of the medical consultant.

Fig. 5. The medical consultant, knowing well the local facilities, is able to advise the counselor in regard to the best professional care as well as other types of service.

Fig. 6. Medical consultants call upon members of the Medical Advisory Committee at any time for guidance in special programs and when special situations arise. In addition, the executive committee may be called in session at any time. Regular meetings of the Medical Advisory Committee are held at infrequent intervals with one meeting a year as the prevailing policy.

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Member of the Missouri Professional Advisory Committee and Chairman of the Subcommittee of Medical Consultants, Vocational Rehabilitation Service.

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has now been demonstrated amply. At the last meeting of the Professional Advisory Committee one of us (H.L.M.) was appointed Chairman of the entire group of Medical Consultants, who are about to extend their work by embarking on a program of clinical study and research in specific fields.

REHABILITATION AND RESTORATION THERAPY

Any resident of Missouri who has an occupational handicap or a physical or mental disability which interferes with or prevents him from making a living may apply for help under this program. All applicants may be divided into three main groups: those needing restoration therapy to attain their job objective, those needing training and those seeking only job placement.

Advisement and counseling is administered in all instances. The patient pays nothing for his medical examination, medical and vocational diagnosis, guidance, training or placement. To the extent his financial condition will permit, he is expected to pay for all other services such as medical, surgical or psychiatric care, hospitalization, appliances, tools and licenses, travel and living expenses. If he can pay nothing, public funds are used to pay the full cost of whatever is needed to put him in condition to work. In every case, the counselor makes the decision as to how much the client will pay.

These referrals come from other agencies such as the various relief organizations, high schools, hospitals and others. Many are sent by their family physicians, and this is one of the best sources if family physicians become acquainted with the plan. The patient's own medical advisor generally knows more about his needs than anyone else and this information is invaluable in carrying out a useful and efficient plan of restoration. Every physician should be familiar with this program because with it he can assist many of his patients to resume a qualified occupation.

The routine is fairly simple. The patient or client applies to his nearest local rehabilitation office. These offices are located in St. Louis, Kansas City, St. Joseph, Jefferson City, Hannibal, Chillicothe, Cape Girardeau and Springfield. Counselors from these offices make routine visits to all counties in the state and, if it is impossible for the patient to go in person, he may write to the office and a counselor will call. At the first interview the patient's needs, hopes and desires may be discussed. Next it is necessary to have a general physical examination. All clients without exception have this because only patients with vocational or employment handicaps are accepted and it is necessary to know the extent of the handicap. Regularly licensed Doctors of Medicine only are allowed to make these examinations and the physician is paid. This medical report, together with other data obtained by the case worker, is then reviewed by the local medical consultant in a conference with the counselor. Each week these conferences are held in each of the six district offices. Sometimes enough information is available at this first review to make recommendations which, when carried out, will complete the case. The handicap may be obvious, no further medical treatment may be necessary, and the vocational objective may be sound and easily obtained. Many cases are more difficult. It is possible, if necessary, to place the patient in a hospital for further diagnosis. One or more specialist examinations may be needed. After all of these reports are secured, treatment may be recommended. This may or may not require hospitalization, surgery or other medical procedures. The objective is to remove or lessen the physical handicap and, if there is a chance to effect a 50 per cent improvement, this is done. If the patient is medically indigent, all of the medical and surgical expenses are paid.

In addition to his direction of the counselors, the medical consultant is in intimate contact with the administrative officers who have learned to look to him for advice in all matters of medical care and policy. Thus the entire program has the benefit of close medical contact at all levels from the case worker to the state director. In addition, the Profesisonal Advisory Committee, composed of medical and surgical specialists, a hospital administrator, social worker, physical therapist, is available at all times either as individual members or during full or executive meetings, which are held as often as indicated.

HOW THE PROGRAM WILL HELP PHYSICIANS

There are several types of cases in which the program can be helpful. First, there is the indigent person who has a remediable physical handicap but cannot afford medical care, and free care is not available in the community. The entire expense of physical restoration can be cared for. Next, there are patients who have been able to care for a part of their needs, but not completely, e.g., an amputee unable to buy an artificial limb, or a patient who requires a hearing aid. There is a large class who aptly may be termed the forgotten men and women. They have suffered disease or injury which renders them incapable of earning a living. The physicians may have done all they could do and no further medical treatment may be needed or be possible. For these people, counseling and retraining, with development of new skills, will make them wage earners once more. It is easy to see that restoration therapy and rehabilitation have added something to medicine which has long been lacking. With these, treatment of the man as a "whole" is now possible.

THE ECONOMICS OF REHABILITATION

This program is not based on charity. Each service is paid for by public funds. Fee schedules have been set up for all professional activities (except the Professional Advisory Committee, which serves without pay). These fees include payment for the initial physical examination by the family

doctor, for specialist and diagnostic tests, hospitalization expenses and final training. These price schedules have been formulated carefully and are under constant surveillance in order to correct inequalities or irregularities. The indigent patient usually is referred to as a client and receives this care not as a beggar of alms but as a temporarily incapacitated citizen claiming his right to be able to work. In the same way those giving services are able to assume a dignified professional attitude toward the client because their efforts are paid for.

The economics of the program are sound because its objective is the transferral of the disabled from the ranks of the tax consumers to taxpayers. Extensive data have been assembled by the state, regional and federal offices to show that this is true. The average cost of rehabilitation is about $300 per client. This is a nonrecurring item and is to be contrasted with the yearly cost of maintaining a dependent person at public expense. More important is the tremendous increase in the earning capacity of the rehabilitated individual. For example, in 1945, 41,925 persons earned over $73,000,000, or six times what they earned before receiving rehabilitation services. This change from tax consumer to taxpayer has repaid the federal government nearly 90 per cent of the cost of the program in terms of income tax payments alone from the rehabilitated individuals. This is in addition to dividends in the form of taxes received by the various states and territories. Moreover, these financial returns are repeated year after year with no further outlay. More important, however, are the financially immeasurable human values which emerge from the transformation of the dependent, depressed, useless citizen to a self-supporting, happy worker able to carry his own load by his own efforts.[2]

THE REHABILITATION PROGRAM IN MEDICAL EDUCATION

The success of the rehabilitation program undoubtedly will have a profound influence on current medical education. The present tradition of training doctors is limited to the study of the diagnosis and treatment of disease. Rehabilitation reaches out to far wider frontiers because it emphasizes the restoration of a disabled individual to his rightful place as a useful and self supporting citizen. In this process the detection and elimination of disease is of obvious importance, but no real program of medical care should be limited to this objective. How often do the best technical and scientific efforts of the physician and surgeon achieve but part of the job of leading the patient to his fullest potentialities! A cholecystectomy may be successful, the wound heal, the pain be relieved, but the patient may have lost his job or need help in preparing for a more suitable job. Moreover, he has been sick for such a long time that he has developed fears of one type or another aggravated by domestic problems. By supplying adequate advice, guidance and vocational training, he becomes able to do better work and earn much more than ever before. As a result, his home situation becomes more stabilized and happy. Another example would be a young girl with a hearing defect who has long been protected by her mother from the realities of life so that it looks as if she will become a permanent dependent. After special study, a program was devised which enabled her to develop her social and economic independence with the help of a proper hearing aid. This required frequent interviews with the mother and cooperation of the family doctor. Eventually the girl got a good job, mingled with her fellow workers and finally met a young man to whom she is now happily married.

Countless patients require slight to extensive psychiatric advice in addition to medical and surgical care in preparation for vocational training. It is difficult to divide the human individual into parts. His problems may require the help of various specialists, but he himself is an indivisible whole. Rehabilitation recognizes this indivisibility of the human being and thus purports to integrate all therapeutic procedures in terms of the individual patient. This attitude marks a changing trend in medical education. The success of this program will emphasize this trend even more. Thus disease becomes an incident in the case of the patient; the patient becomes the primary objective.

SUMMARY

The Missouri State Program of Rehabilitation for indigent civilians has been established so that all procedures are under close and frequent medical direction which is supplied by physicians in their local communities. This is a program of complete medical care based on rehabilitation of the disabled citizen; its success probably will have a great influence on medical education of the future.

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ALTITUDE OF 8,000 FEET DOES NOT INJURE HEART

Contrary to widespread belief, living at an altitude as high as 8,000 feet is not injurious to the heart, says Gonzalo Esguerra Gomez, M.D., of Bogota, Colombia.

Writing in the August 7 issue of *The Journal of the American Medical Association,* Dr. Gomez bases his conclusion on a study of 480 residents of Bogota, which is 8,016 feet above sea level. In none of these residents did he find enlargement of the heart out of proportion to the general build or abnormal variations in blood pressure, pulse, respiration or number of red blood cells.

Prolonged strenuous exercise can cause enlargement of the heart, he says, but no more so at 8,000 feet than at sea level.



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PRESIDENT'S PAGE

The Council on Medical Service of the American Medical Association recently reported that progress under the Hill Burton Act (Public Law 725) is far better than most proponents of the Act expected. Only six months have passed since approval of the first project, yet, 347 projects have been approved in forty-two states as of July 1, 1948. Also contrary to expectations, the program is reaching into areas really in need of additional facilities.



That most of these general hospitals in the forty-two states will be located in rural communities is shown by the following list: 93 in towns under 2,500 population; 47 in towns of between 2,500 and 5,000 population; 35 in towns of between 5,000 and 10,000; 23 in towns of between 10,000 and 25,000; 4 in towns of between 25,000 and 50,000, and 10 in towns of 50,000 population and over.

In Missouri projects have been approved for the following towns: Springfield, population 80,000; Kennett, population 8,500; Rolla, population 7,500; Hayti, population 3,000; Perryville, population 4,000; Troy, population 1,500.

It is to be hoped that the eventual construction of these general hospitals will go a long way toward solving the rural medical problem in Missouri.

Robert Mueller M.D.

THE JOURNAL
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SEPTEMBER, 1948

EDITORIALS

AGREEMENT BETWEEN VETERANS ADMINISTRATION AND THE ASSOCIATION

The agreement between the Association and the Veterans Administration covering examinations and treatments of veterans in cases specifically authorized by the Veterans Administration has been renewed for the period July 1, 1948, to June 30, 1948.

A copy of the Agreement appears on page 680.

ACTION OF HOUSE OF DELEGATES ON MISSOURI RESOLUTIONS

The House of Delegates of the Association felt sufficiently strongly on two matters that Delegates to the American Medical Association were instructed to present them to that House of Delegates. One was the practice of medicine by medical schools which it was felt is definitely a detriment to the best medical practice. The resolution as presented to the House of Delegates of the American Medical Association by Howard B. Goodrich, M.D., Hannibal, a Missouri Delegate, and the recommendations of the Committee on Hospitals and the Practice of Medicine of the House of Delegates of the American Medical Association follow:

WHEREAS, There is an ever increasing tendency on the part of hospitals and medical schools throughout the United States to engage in the practice of medicine for profit, and

WHEREAS, This corporate practice of medicine is a professional evil second only in its consequences to socialized medicine, and

WHEREAS, Such practice constitutes not only exploitation of the medical profession but perhaps also of the patient, therefore be it

Resolved, That the House of Delegates of the Missouri State Medical Association in convention assembled condemn the practice of medicine for profit by either hospital or medical school, and be it further

Resolved, That our Delegates to the American Medical Association be instructed to present this information to the House of Delegates of the American Medical Association, and be it further

Resolved, That the American Medical Association remove every hospital engaged in the practice of medicine from its list of hospitals approved for internship and residency training, and be it further

Resolved, That the American Medical Association remove any offending medical school from its list of institutions approved for medical teaching.

RECOMMENDATIONS OF COMMITTEE ON HOSPITALS AND THE PRACTICE OF MEDICINE

1. Because of the difference in the laws of the various states, your Committee recommends that the Bureau of Legal Medicine and Legislation of the American Medical Association be instructed immediately to make a study of the various state laws defining the legal status of corporations attempting to practice medicine in the various states, defining in each instance the differences in the various state laws concerned with this problem, and that, if necessary, legislation be prepared by the Bureau of Legal Medicine and Legislation which will define all of these matters so that uniform legislation to simplify legal interpretations may be prepared and supported by the American Medical Association to insure the legality of the actions taken.

2. That the House of Delegates request the Board of Trustees to send within the next six weeks an official communication to medical schools and hospitals informing them of the principles and policies of the House of Delegates concerning the practice of medicine by institutions and stating that the American Medical Association will be glad to cooperate in every way with such institutions and appealing to them for immediate cooperation in the general over-all plan and for assistance in the preservation of the private practice of medicine.

BLUE CROSS COVERAGE

The second resolution introduced by Missouri in the House of Delegates of the American Medical Association follows:

WHEREAS, The American Medical Association on many occasions has encouraged the formation of nonprofit voluntary prepayment hospitalization and medical service plans by its constituent state and county societies; and

WHEREAS, These constituent state and county societies have participated in the formation and development of nonprofit voluntary hospitalization programs (nationally known as Blue Cross hospitalization plans) and nonprofit medical surgical service programs (nationally known as Blue Shield plans); and

WHEREAS, The action of the American Medical Association in cancelling its contract with the Chicago Blue Cross and Blue Shield plans which provided hospitalization and medical surgical coverage for the employees of the American Medical Association and in contracting with a commercial insurance company for the same coverage was not in the best interest of the medical profession as a whole or the voluntary Blue Cross and Blue Shield plans; and

WHEREAS, This action of the American Medical Association has already by adverse publicity caused serious embarrassment to the Blue Cross and Blue Shield plans; therefore be it

Resolved, That the House of Delegates of the American Medical Association instruct its Board of Trustees immediately to cancel the contract with the commercial insurance company and reinstate the contract with the Blue Cross and Blue Shield plans.

The portion of the report of the Reference Committee on Medical Service and Prepayment Insurance, which dealt with this and several similar resolutions from other states, follows:

Your committee considered the several resolutions referred to it pertaining to the current health insurance coverage of the employees of the American Medical Association. Your committee also considered the evidence presented to it by the official representatives of the American Medical Association, House of Delegates and others.

Your committee is of the opinion that because the American Medical Association has sponsored and encouraged the development of nonprofit voluntary prepayment hospitalization and medical service plans that the discontinuance of Blue Cross Hospital Service for its employees has reacted unfavorably to the nonprofit voluntary prepayment hospital and medical service philosophy and, likewise, unfavorably to the interest of plans developed by the various state and county medical societies throughout the country.

However, your committee is of the opinion that circumstances and conditions prevailing at the time the present insurance contract was entered into were such that this action was thought to be in the best interests of the employees of the American Medical Association.

Your committee recommends because of the above-stated opinions that at the expiration of the present contract of hospital and medical health coverage the American Medical Association, through its proper officials, make every sincere effort to procure this coverage for its employees through Blue Cross-Blue Shield local organization. The committee understands that this coverage is and will be available.

LEGISLATION AFFECTING PHYSICIANS

Two laws have been enacted by the Congress which are of major interest to members of the profession.

The Selective Service Act of 1948 provides for the registration of all men between the ages of 18 and 26 (that is ages 19 through 25). The law provides that physicians who have not reached their 26th birthday may be drafted unless they apply for a commission.

The Congress generally agreed that physicians who were assisted by the government in securing their medical education should be the first to contribute their services. The House of Delegates of the American Medical Association at its recent meeting adopted the following resolution to the same effect:

"Resolved, That the state and county medical societies be urged by the action of the House of Delegates of the American Medical Association to exert every effort in their communities to insure a sufficient number of available physicians be encouraged to volunteer to serve their nation during this period of emergency. The program of priority as established by the Council on National Emergency Medical Service and published by the Bureau of Legal Medicine and Legislation on April 29, 1948, for the activating or the calling up of civilian medical personnel or units into the armed forces is as follows:

"First: Those recent graduates who were enrolled in A. S. T. P. or V-12 programs who have not completed their obligated tour of duty as a medical officer and all others who were deferred by Selective Service to continue their medical education.

"Second: Other physicians who did not serve in World War II.

"Third: Those physicians who served the least in World War II."

The medical profession may thus be assured that the youth of the nation called to serve in our armed forces during the emergency will never lack for adequate medical and hospital care.

The other law provides that Reserve Officers of any of the Armed Forces who have completed twenty or more years of acceptable membership may retire with benefits after they reach the age of 60. Retirement pay will be computed on 2½ per cent of base pay for the highest rank held multiplied by the number of years on active duty, plus ½ per cent of the same base pay multiplied by the number of years on inactive status. The pension may amount to as much as 75 per cent of the highest active duty pay drawn by the person receiving the pension.

NEWS NOTES

Hugh L. Dwyer, M.D., Kansas City, discussed "The Care of Infants and Children in Hot Weather" on radio station WDAF, Kansas City, on July 16.

Paul A. Knepper, M.D., St. Joseph, and W. O. Finney, M.D., Chaffee, have been reappointed by the Governor to the State Board of Medical Examiners for a four year term.

L. C. Calvert, M.D., Weston, was installed as president of the Weston Rotary Club on July 9.

The first regional Red Cross blood center in Missouri was dedicated in Springfield on July 30. Raymond F. Barnes, M.D., St. Louis, administrator of the medical and health services of the midwestern area, American Red Cross, was present for the ceremonies. Wallis Smith, M.D., Springfield, expressed the appreciation of the medical profession for the service at the dedication.

Claude J. Hunt, M.D., Kansas City, was the guest speaker before the Kansas City Optimist Club on August 6 and spoke on "Cancer of the Stomach and Colon."



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MUSINGS OF THE FIELD SECRETARY

The Missouri Health Council was organized formally on July 22 at a meeting in Jefferson City of approximately twenty-five representatives of fifteen state-wide organizations and agencies with a fundamental interest in health. The purpose of the Council is set forth as follows: To bring together state-wide organizations and agencies, with a fundamental interest in health, for discussion, debate and interchange of opinions and planning; to serve as a clearing house on health problems and programs; to facilitate joint planning in order to encourage coordination of efforts on state and local levels.

For the most part, the organizations and agencies in this state with health programs know little of the what and why of each other's activities. If the Council functions as it should, it is reasonable to assume that this situation will be corrected to a large extent. With such correction, there should follow better relationships between groups working on health problems, more cooperation and less duplication of effort.

The Missouri State Medical Association is one of the fifteen organizations and agencies represented on the new Missouri Health Council. The other members are: Missouri State Dental Association, Missouri State Teachers Association, Missouri State Department of Education, Missouri Division of Health, Missouri Division of the American Cancer Society, Missouri Farm Bureau Federation, Missouri Public Health Association, Missouri State Hospital Association, Missouri Tuberculosis Association, Missouri Medical Service, Missouri Division of the American Red Cross, Missouri Farm Home Administration, Missouri Division of the National Foundation for Infantile Paralysis and the Missouri Association for Social Welfare.

Mr. Chester Starr, Director, Rural Health Service, Missouri Farm Bureau Federation, was elected chairman of the Council; Mr. Ray McIntyre, Field Secretary, Missouri State Medical Association, chairman-elect, and Mr. Robert Clough, Missouri Field Representative of the American Red Cross, secretary-treasurer. The executive committee is composed of John Williams, M.D., Division of Health; Carl F. Vohs, M.D., President, Missouri Medical Service; Mr. Donald Pratt, Executive Secretary, Missouri Tuberculosis Association, and Mrs. Milton Duvall, State Advisor of Women's Activities, National Foundation for Infantile Paralysis.

Two preliminary meetings were held before the July 22 meeting culminated in the formal organization of the Council. The meetings were called and sponsored by the Committee on Rural Medical Service of the Association.

County medical societies are in a strategic position to promote similar councils on a local level. Would not such promotion come under the recently much used term "public relations"?

DEATHS

Saylor, Edward, M.D., Phillipsburg, a graduate of Missouri Medical College, 1884; honor member of the Laclede County Medical Society; aged 93; died June 24.

Hogan, Robert E., M.D., West Plains, a graduate of Washington University School of Medicine, 1909; member and past president of the South Central Counties Medical Society; Fellow of the American Medical Association; aged 61; died July 8.

Baldwin, Frederick A., M.D., Kansas City, a graduate of the University of Michigan Medical School, 1898; honor member of the Jackson County Medical Society; aged 71; died July 13.

Chenoweth, John Albert, M.D., Joplin, a graduate of Rush Medical School, 1914; member of the Jasper County Medical Society; aged 59; died July 15.

Breuer, William H., M.D., St. James, a graduate of the Beaumont Hospital Medical College of St. Louis, 1898; Past President and former Councilor of the 27th and 9th Councilor District of the Missouri State Medical Association and Vice Chairman of the Council; member and former president of the Phelps-Crawford-Dent-Pulaski County Medical Society; Fellow of the American Medical Association; aged 72; died July 16.

MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The scehdule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for September and October, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

September 1: Skin.
September 3: Gynecology and Genitourinary.
September 8: Skin.
September 10: Breast.
September 15: Gastrointestinal.
September 17: Cervix.
September 22: Skin.
September 24: Head and Neck.
September 29: Skin.
October 1: Gynecology and Genitourinary.
October 6: Miscellaneous.
October 8: Breast.
October 13: Skin.
October 15: Cervix.
October 20: Gastrointestinal.
October 22: Head and Neck.
October 27: Skin.
October 29: Miscellaneous.

AGREEMENT BETWEEN VETERANS ADMINISTRATION AND THE ASSOCIATION

The Missouri State Medical Association (hereinafter called the "contractor") and the Veterans Administration for the purpose of establishing and maintaining a close working relationship in order to establish a well integrated service for providing medical care and treatment for veterans in the State of Missouri, beyond those services available to the Veterans Administration in existing Veterans Administration facilities and installations, do hereby mutually agree as follows:

1. The contractor will request all of its members (citizens of the United States who are duly licensed physicians) to participate in a state-wide program whereby physicians in private practice in the State of Missouri will render medical services (examinations, treatments and counsel) in such cases as may be specifically authorized by the Veterans Administration; the physician reserving the right, however, to decline any particular case.

2. The contractor will submit to the Veterans Administration a list of its members who desire to provide service for eligible veterans in the home communities of such veterans. This list may be augmented from time to time as additional physicians may indicate a desire to participate in the program. The physicians so listed will be fee basis physicians of the Veterans Administration. By notice in writing, a physician may at any time request that his name be removed from the list of fee basis physicians.

3. The contractor will assist the Veterans Administration in establishing, for examinations and treatment, a list of competent specialists who meet the qualifications of specialist of the Veterans Administration.

4. Lists of physicians submitted by the contractor will be broken down by counties or districts in order that the veterans for whom services are authorized may select a physician practicing in his home community. The choice of the physician by the veteran, provided for herein, is not applicable to examinations for pension or compensation rating purposes. Such examinations may be performed only by a physician specifically designated for that purpose by the Veterans Administration.

5. (a) Fees for medical services in authorized cases shall be paid by the Veterans Administration to the physician rendering the service in accordance with the Fee Schedule hereto attached, VA Catalog No. 5 (Fee Schedule for Medical Services) dated February 15, 1948, which is made a part of this agreement. The contractor warrants that, to the best of its knowledge, the rates set forth herein are not in excess of the rate of fees charged other persons who are not Veterans Administration beneficiaries for the same or comparable services. It is mutually understood that the fees stated in the Fee Schedule represent the maximum amount that may be charged, and do not represent the amount to be paid in every case. The Veterans Administration will advise each physician of this provision and will require each physician to certify in submitting his statement of account that the fees charged are not in excess of the fees charged by him for comparable service rendered nonveterans. It is understood that unusually involved cases and services not scheduled will be subject to review and recommendation by the Missouri State Medical Association to the Veterans Administration for determination of the appropriate fee.

(b) It is mutually agreed that during the term of the contract any item in the Fee Schedule which is mutually found to be inequitable may be increased or decreased after review and final determination to that effect by the Veterans Administration.

(c) It is further understood that services of physicians hereinunder will be so utilized that fees therefor to any individual physician will not exceed $6,000.00 per annum without the prior approval of the Chief Medical Director, Veterans Administration, Washington, D. C. It will be the responsibility of the Veterans Administration to enforce this policy and to advise all participating physicians that it is in effect. All Veterans Administration Branch Medical Directors have been instructed with regard to this policy.

6. The Veterans Administration will handle administrative and clerical details in connection with the authorization of examinations or treatments and the maintenance of records; and will arrange for transportation of the veteran if necessary.

7. When authorizing treatment, the Veterans Administration will furnish to the veteran, proof of such authorization and a list of fee basis physicians in the county or district in which the veteran is located, in order that he may select his own physician for the services authorized.

8. The Veterans Administration will review reports of examinations and services to determine their adequacy. No fees will be paid by the Veterans Administration for reports which are not acceptable to the Veterans Administration or for services rendered in unauthorized cases.

9. The contractor will establish one or more boards of review composed of physicians. It shall be the duty of such board to review reports, which are deemed by the Veterans Administration to be inadequate or which do not meet the requirements of the Veterans Administration; to recommend, at its discretion, the disqualification of any physician for further work with the Veterans Administration whose work is found by the board to be incomplete or unsatisfactory; to advise and assist the Veterans Administration on other matters within the scope of this program.

10. It is agreed that physicians rendering services hereunder will be citizens of the United States, who are doctors of medicine duly licensed to practice medicine or surgery in the State of Missouri.

11. This agreement shall be effective from July 1, 1948, to June 30, 1949, and may be terminated by either party by giving thirty days written notice to that effect.

12. This agreement, if mutually satisfactory, may be renewed indefinitely for periods of one year each, upon notice in writing to the contractor at least sixty days prior to the expiration of each period of one year, and written statement from the contractor within thirty days after such notification agreeing to the renewal.

13. No member of or delegate to Congress, or resident commissioner, should be admitted to any share or part of this agreement or to any benefits that may arise therefrom, unless it be made with a corporation for its general benefit.

14. The contractor agrees that in performing this agreement, it will not discriminate against any employee or applicant for employment because of race, creed, color or national origin, and that it will include a similar provision in all agreements entered into by it to effectuate this agreement.

15. The contractor does not propose to make any charge for any service rendered to the Veterans Administration under this agreement.

NATIONAL HEALTH PROBLEMS

Report on Activities of Committee on Labor and Public Welfare

The remarks of Hon. H. Alexander Smith of New Jersey in the Senate of the United States on Thursday, June 17, follows:

MR. SMITH: Mr. President, I think it is fitting before the adjournment of the Eightieth Congress for me to make a brief report to the Congress as chairman of

the Subcommittee on Health of the Committee on Labor and Public Welfare.

The Subcommittee on Health has been very active during both sessions of the Eightieth Congress. While there have been many bills covering various aspects of the health problem considered by the Committee, our principal attention has been directed to a consideration of the over-all health problem of the United States and the suggestions that have been made from time to time and incorporated in messages of the President of the United States in recommending the establishment of some form of compulsory health insurance for all our people.

The most important investigation undertaken by the committee during the hearings held in both sessions of the Eightieth Congress have been concerned with this very controversial issue of compulsory health insurance. Because of the fact that the subcommittee was unable to arrive at any definite conclusions with regard to this matter, the committee unanimously reported a resolution known as Senate Resolution 249 providing for a continuation of the study of national health problems by the committee and a report to the next Congress not later than March 15, 1949.

This matter is of such importance that I ask unanimous consent to insert in the Record at this point in my remarks the full report of the Committee on Labor and Public Welfare accompanying Senate Resolution 249. Let me note in incorporating this report that it contains a reference to the poll made by the committee of the governors of the 48 states in order to obtain their views on the correct approach to this problem, and it also contains the summary, conclusions and recommendations of the Brookings Institution which was invited by the chairman of the subcommittee to make a report on this matter.

There being no objection, the report (No. 1571) was ordered to be printed in the Record as follows:

The Committee on Labor and Public Welfare, to whom was referred the resolution (S. Res. 249) to provide authorization for the Subcommittee on Health of the said committee to continue its study of the health problems of the Nation and of legislative proposals relating thereto, having considered the same, report favorably thereon without amendment and recommend that it do pass.

The resolution is as follows:

"(S. Res. 249, 80th Cong. 2d sess.)

"Resolved, that the Senate Committee on Labor and Public Welfare is hereby authorized and directed through the Subcommittee on Health of the said committee to—

"(a) Continue its study of the health problems of the Nation and of legislative proposals relating thereto which have been referred to the said subcommittee which study shall be primarily concerned with ascertaining the full extent and nature of existing national health problems and the action, if any, which the Federal Government should take in relation to said problems;

"(b) Consult, in the course of such study, with Federal agencies administering health and related programs, with such other legislative committee of the Senate as are concerned with related matters, and with such other agencies, organizations or persons as the subcommittee may desire to consult;

"(c) Report to the Senate not later than March 15, 1949, the results of the study, together with such proposed legislation, if any, and such other recommendations as the subcommittee may deem desirable.

"Sec. 2. (a) The Senate Committee on Labor and Public Welfare, through the said Subcommittee on Health, is authorized to sit and act at such times and in such places during the sessions, recesses and adjourned periods of the Eightieth Congress; to employ such consultants, clerical and other assistance; to procure such printing and binding; to require by subpoena or otherwise the attendance of such witnesses and the production of such books, papers and documents; to administer such Oaths; to take such testimony; and to make such expenditures, within the limits below set forth, as it deems advisable. The cost of stenographic services to report such hearings shall not be in excess of 25 cents per hundred words.

"(b) The expenses incurred under this resolution, which shall not exceed $10,000, shall be paid from the contingent fund of the Senate upon vouchers approved by the chairman of the committee."

Background Summary of Work of the Subcommittee on Health

The Subcommittee on Health of the Committee on Labor and Public Welfare concluded on June 1, 1948, a series of extensive hearings on major bills containing proposed health legislation. These hearings have continued intermittently over a period of more than a year during this Congress. A large number of witnesses representing many different organizations, groups and individuals, and presenting different and often widely divergent views, were heard during this time. The resultant record of the direct testimony and other evidence available to the subcommittee is voluminous; it is likewise fundamental in its broad implications, as well as in its bearing on ways and means of dealing with health problems.

During the present Congress to date, a total of 27 bills on proposed health legislation have been referred to the Subcommittee on Health for consideration. Of these, S. 545, introduced by Mr. Taft, for himself and others, and S. 1320, introduced by Mr. Murray, for himself and others, are comprehensive proposals containing, among their many provisions, various measures for dealing with the controversial question of medical care for individuals. Owing to the comprehensiveness and importance of these two major proposals, and because their provisions affect, overlap, or duplicate the contents of a majority of the remaining bills before the subcommittee, it was fitting that this subcommittee should devote the greater part of its available time to the consideration of these comprehensive measures. Hearings on S. 545 and S. 1320 were convened on 26 different days during this Congress. Hearings also have been held on the following bills: S. 1290, providing for grants-in-aid to the states to assist in the development of school health services for the prevention, diagnosis and treatment of physical and mental defects and conditions; S. 720 and S. 2215 providing for the support of research, training and control in diseases of the heart and circulation; S. 678, providing certain medical supplies and services to individuals; and S. 2341, authorizing an increase in the annual appropriation for the Gorgas Memorial Laboratory for research in tropical diseases. Scope of proposed legislation under consideration of the subcommittee also includes measures for the expansion and maintenance of local public health units (S. 2189); for the training of medical, dental, nursing and public health personnel (S. 1455 and S.

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Surgical Technique, Surgical Anatomy & Clinical Surgery, four weeks, starting October 11, November 8.
Surgical Anatomy & Clinical Surgery, two weeks, starting September 27, October 25, November 22.
Surgery of Colon & Rectum, one week, starting October 18, November 15.
Surgical Pathology every two weeks.
FRACTURES & TRAUMATIC SURGERY—Intensive course, two weeks, starting October 25.
GYNECOLOGY—Intensive Course, two weeks, starting October 11.
Vaginal Approach to Pelvic Surgery, one week, starting October 25.
OBSTETRICS—Intensive course, two weeks, starting October 25.
UROLOGY—Intensive Course, two weeks, starting September 27.
MEDICINE—Intensive Course, two weeks, starting October 11.
Personal Course in Gastroscopy, two weeks, starting September 27, November 8.
Gastroenterology, two weeks, starting October 25.
Hematology, one week, starting October 4.
DERMATOLOGY—Formal Course, two weeks, starting October 4.
Clinical Course every two weeks.
OPHTHALMOLOGY—Intensive Course, two weeks, starting September 20.
Refraction Methods, four weeks, starting October 11.
Ocular Fundus Diseases, one week, starting November 15.

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From where I sit *by* Joe Marsh

Who Is This Man?

Now and then, in the pages of the *Clarion*, I run a biographical quiz, under the heading of "Who Is This Man?" For instance . . .

"He was one of the earliest lovers in American history . . .

"And yet he was too shy to court a woman outright . . .

"He came to the New World on the Mayflower . . .

"A cooper to repair the beer barrels accompanying the Pilgrims . . .

"Who is this man?"

I thought that everybody was stumped. But not Ma Hopkins, who returned the clipping to me with "John Alden" on it. She recognized all the clues—including that reference to "beer" and "cooper."

For Ma—who's read her history, knows that beer as the beverage of moderation, is as old in this land of ours as the never-ending American search for tolerance which brought the Pilgrims over to this country in the first place.

Joe Marsh

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2588); for the construction of nursing homes for aged persons (S. 2640); and others.

During this Congress to date, the bills reported to and passed by the Senate include: S. 176, providing for research, training and control in dental diseases; S. 1454, providing for the promotion of Public Health Service commissioned personnel and for other administrative matters; and S. 2215, providing for research, training and control in diseases of the heart and circulation. The provisions of these bills clearly fall within the province of, and they further support, established, long range operations of the Federal Government in the public health field. A majority of the other basic proposals under consideration by the Subcommittee on Health, however, involve serious differences of opinion with respect to their proper place in the over-all approach to health problems, and with respect to the proper role of the Federal Government in relation thereto. Most of these proposals must be considered in relation to other health measures, existing and proposed, rather than piecemeal.

Fundamental Issues Underlying the Consideration of Postponed Health Legislation

The problems involved in the consideration of health legislation are numerous and frequently complex. Yet, certain fundamental issues have emerged from the findings of the subcommittee which require further investigation and study, as a prelude to any broad recommendations governing health legislation. First, the question as to whether a serious national health problem actually exists is a debatable issue. Evidence available to the subcommittee on this matter is quite conflicting and further inquiry into the subject is deemed necessary. The issue involves consideration of (1) the state of the health of the population, (2) the distribution of the Nation's medical, hospital, dental and other health services and (3) whether or not the majority of the population has access to such services.

Second, there is a fundamental question as to whether, and to what extent, it is necessary for the Federal Government further to expand its operations in the field of health. Available evidence raises many questions as to the desirability, as well as the necessity, of wide-scale Federal intervention, particularly in the field of medical care for individuals.

Third, the basic issue involved in the provision of medical and certain other health services for individuals, in the event of further Federal expansion in this field, rests in the question of methods or systems to be employed. The two major proposals under consideration by the subcommittee, S. 545 and S. 1320, differ very fundamentally as to method. The former is essentially a grant-in-aid system to assist the states in developing their own health programs. It is predicated on the assumption that individuals and families able to pay for their own medical and other health care will do so, either through voluntary participation in existing prepayment plans or by direct payment of fees for services. Wide latitude is given the states in working out plans for providing required health services for persons unable to pay the costs. On the other hand, the basic medical care provisions of S. 1320 call for the adoption of a system of compulsory health insurance, under which all employed persons would be taxed to support a central health fund. The Federal Government would have general supervision of the system, including necessary regulatory procedures and control of the central fund. The issues raised in consideration of such a compulsory system are multitudinous and extremely controversial. Moreover, such issues frequently extend far beyond the conditions directly associated with determinable health problems, involving and affecting, as they do, the form and functioning of the economic system, the operations and responsibilities of the respective levels of government, and the whole question of the rights of individuals.

Fourth, it is apparent that individual measures in proposed health legislation must be considered in proper perspective rather than individually. It is further apparent that health legislation as a whole, enacted and proposed, must be considered in relation to other broad welfare programs of government. The fundamental issue here is that of ascertaining the long range effects of such proposals as compulsory health insurance and wide scale grants-in-aid programs, assuming they were to be adopted and their resultant tax levies and regulatory requirements were added to those already existing. Very little light has been shed on this whole question; yet it is of the utmost importance to further deliberation on proposed health legislation.

Fifth, there is a basic question as to the proper administrative organization for dealing with health functions. Regardless of whatever specific health programs might be adopted by Congress, the organizational issue will have to be faced. Health programs and related functions of the Federal Government are now widely scattered throughout the various governmental departments and agencies, with an accompanying lack of full coordination. Present proposals before the committee involve organizational questions, although none of them cut across all the major departmental lines involved. There has been reported for consideration of the Senate during this Congress a bill (S. 140) providing for the creation of a new executive department to be known as the Department of Health, Education and Security. Passage of this bill, or any similar proposal, would affect the ultimate consideration and perfection of pending health measures.

Furthermore, the entire organization of the executive branch of the Government is now being studied by the Commission specifically created for that purpose by Public Law 162, which was passed during the first session of this Congress. This Commission on Organization of the Executive Branch of the Government is giving detailed consideration to the existing Federal functions and organizational structure concerned with health and related matters. The Commission undoubtedly will make a number of fundamental recommendations affecting health and welfare administration when it reports to the Eighty-first Congress in January 1949. Since the Federal Government already is engaged in health and related activities to an extent much greater than may be generally realized, it is entirely fitting that the Subcommittee on Health should have the opportunity of availing itself of the Commission's recommendations on the organizational question.

Finally, it is a matter of fact, although frequently overlooked in testimony before the subcommittee, that health does not exist in a vacuum. Instead, health is the net result of the working of a very considerable range of environmental, personal and other interrelated factors. Legislation providing medical care alone, for example, will not necessarily guarantee the prevalence of good health. Should there be also an extension of the present Federal public health program?



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Original Evidence Made Available to Subcommittee on Health

In addition to the extensive hearings conducted by the Subcommittee on Health, the inquiry into proposed health legislation has led to the recent production of certain original information on the subject which, it is believed, merits the careful consideration, not only of the Committee on Labor and Public Welfare, but of all Members of Congress and the public as well. This information deals, on the one hand, with the preferences of the state governors in regard to national health proposals and, on the other hand, with the results of a fundamental analysis of the issues underlying such proposals by the Brookings Institution. The basic import of this evidence, high lights of which are outlined below, is such that it necessitates considerable rethinking and reevaluation of proposed health legislation.

Preferences of State Governors

In August 1947, copies of the two principal national health proposals under consideration, S. 545 and S. 1320, were submitted to the respective state governors. The proposals were submitted on behalf of the Subcommittee on Health by its chairman, and the governors were requested to indicate their views and preferences as limited to a choice between the two major proposals. Replies were received from 40 of the 48 governors, a summary of which follows:

Classification of replies	Number of Governors
Favored S. 545 (with or without qualifications)	25
Favored S. 1320	0
No preference indicated	10
Not in favor of either S. 545 or S. 1320	5
Did not report	8
Total	48

Although this report of preferences of the governors clearly indicated their general disapproval of S. 1320, and thus of compulsory health insurance as therein provided, the reports were in no sense overwhelmingly favorable to the provisions of S. 545. While 25 governors expressed preference for this grant-in-aid measure over S. 1320, most of them did so with considerable reservation as to provisions of the bill. Perhaps equally significant was the fact that 5 governors expressly disapproved both of the proposals, while 10 did not elect to indicate any preference. Analysis of the detailed reports indicates that it is not unlikely that a much larger number of the governors than did would have indicated disapproval of both bills had such an alternative choice been included in the inquiry.

This inquiry was neither designed nor intended as a full blown survey of the problem and its results are obviously of limited application. Nevertheless, the broad implications of the governors' reports cannot be ignored; namely, that in general the state governments, which they represent, do not appear to be confronted with health problems sufficiently serious at this time to demand either wide scale intervention by the Federal Government or the introduction of revolutionary methods for dealing with the problems that do exist.

Findings of the Brookings Institution

In view of the controversial nature of the principal issue before the committee, a very real need has existed for a competent and expert analysis of the problem by a disinterested organization. Accordingly, in May 1947 the Brookings Institution was requested by the chairman of the subcommittee to undertake such an analysis. The long established reputation of this public service institution as an independent research foundation is well known in Congress and elsewhere. The Brookings Institution accepted the assignment as a public service to Congress and on February 17, 1948, transmitted in advance a summary of their conclusions and recommendations to the subcommittee. Subsequently, the full context of the report, which was published by the institution in April 1948, was made available to the committee. The broad conclusions and recommendations are as follows:

Conclusions

1. Probably no great nation in the world has among its white population better health than prevails in the United States. A few small homogeneous countries, such as New Zealand with respect to its whole population, are slightly ahead of the United States as a whole, but certain states of the United States with larger populations equal them.

2. It is apparent that the United States under its voluntary system of medical care had made greater progress in the application of medical and sanitary science than any other country. This progress is now reflected in low mortality and morbidity rates of infectious diseases and in increased life expectancy. There is every reason to believe that these trends will continue unabated under our present system of medical care.

3. The nonwhites in the United States have materially poorer health than the whites, but the evidence does not indicate that this condition is primarily or even mainly due to inadequacy of medical care.

4. The advances in health among both the whites and the nonwhites that have been made in the United States in the past four decades do not suggest basic defects in the American system.

5. Although the statistics resulting from the administration of the Selective Service Act—the so-called draft statistics—have been widely used to show bad health among the American people and the need for revolutionary changes in arrangements for medical care of individuals, they are unreliable as a measure of the health of the Nation and cannot be used to show the extent of the medical needs of the country as a whole.

6. Present medical care in the United States compares favorably with that which existed in other leading nations prior to the Second World War.

7. The conditions in extremely poor rural areas that lack the resources to support adequate public services, such as health work, education and highways cannot be satisfactorily solved by subsidies. This problem calls for a radically different approach, either bringing in new or improved economic activities or getting the people to more favorable and administratively less expensive areas. This condition has been accentuated by the emigration of youth from these areas to urban communities.

8. The United States has some individuals and families not possessed of the resources to enable them to pay for adequate medical care. In the future, as in the past, provision must be made for them through public funds or philanthropy. The evidence suggests that many of them are elderly, impaired or underendowed or are widows or deserted women or their dependents. It is doubtful that they could be effectively covered by compulsory insurance because they would lack the means to attain and maintain an insured status. The large majority of American families have the resources to pay



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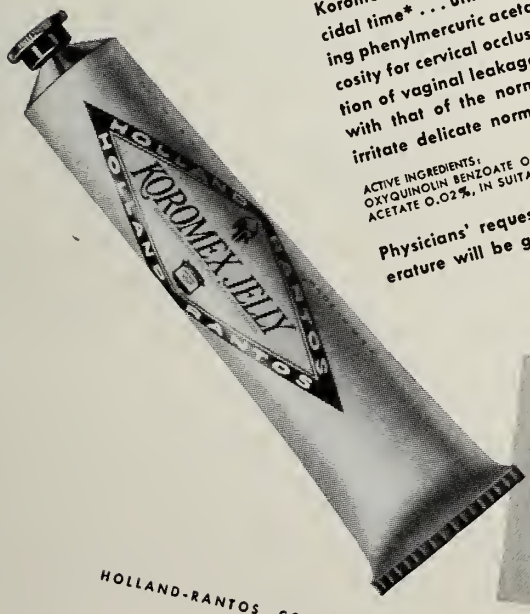
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for adequate medical care if they elect to give it a high priority among the several objects of expenditure. The issue is not whether they can afford medical care but whether they should be compelled by law to pool their risks and to give payment for medical care a top priority. The major alternative for people with ability to pay is to leave them free to determine for themselves what medical care they desire and whether they will pool their risks through voluntary arrangements.

9. Compulsory health insurance would necessitate a high degree of governmental regulation and control over the personnel and the agencies engaged in providing medical care. This field of regulation and control would be far more difficult than any other large field previously entered by the Government, and past experience with governmental regulations and control in the United States causes doubt as to whether it encourages initiative and development.

10. The problem of eliminating politics from Government administration is extremely difficult. It does not seem probable that politics could be eliminated from medical care supplied under a governmental system.

11. Compulsory insurance would inject the Government into the relationship between practitioner and patient. A real danger exists that Government actions would impair that relationship and hence the quality of medical care.

12. The administration of compulsory insurance would require thousands of Government employees for accounting, auditing and inspection and investigation.

13. The cost of medical care presumably would increase because of (a) administrative expenses; (b) the tendency of insured persons to make unnecessary and often unreasonable demands upon the medical care services; and (c) the tendency of some practitioners and agencies to use the system for their own financial advantage.

14. The adoption of compulsory insurance would not immediately make available adequate medical service for all, because there are not at present the facilities nor a sufficient number of trained and experienced physicians, dentists and nurses to meet the demand which would result from compulsory insurance.

15. Proposals for compulsory insurance provide for payment of practitioners under one or all of three methods: (a) Fee for service, (b) per capita, or (c) salary. Use of the fee-for-service device represents the minimum degree of socialization, but it is administratively difficult. Administrative difficulties would probably result in the adoption of the per-capita system which represents a higher degree of socialization or even in the salary system which represents practically complete socialization. It seems questionable whether a country which once embarks on compulsory insurance can turn back but must attempt to remedy defects by more complete government control and administration.

Recommendations

1. For the present, in our judgment, the National Government would be wise to leave to the individual states the question of whether compulsory health insurance is to be adopted or whether the provision of professional services is to be left in the realm of free enterprise. It seems highly probable that in many communities the intelligent cooperation of consumers and practitioners will develop satisfactory arrangements that remain subject to their own control without National Government administration. It seems highly improbable that this experimentation—possible under our Federal form of government—will ultimately develop a single pattern that is applicable to all sections of the country and is desired by a large majority of the people. If such a pattern should develop, it will doubtless then be adopted with a great degree of unanimity. If compulsory insurance should be adopted now by a narrow vote in the Congress, large numbers of persons who are opposed to it would start with a hostile attitude toward the whole undertaking.

2. For the time being the National Government and many of the state governments may well devote their resources and energies to:

(a) Research and developments in the fields of public health.

(b) Health education at the school level.

(c) Teaching of preventive medicine.

(d) Assisting in the acquisition of physical facilities and training of personnel.

(e) Providing systematic care for the indigent and the medically indigent.

3. From the standpoint of public relations, governments might be well advised to leave adult educational campaigns for the control and prevention of disease to the national, state and local voluntary organizations, which have been able to enlist the active cooperation of leading laymen in most sections of the country. It must be remembered that good health is not exclusively a matter of medical care; it also impinges upon causative factors that are nonmedical, such as food, shelter, vice and crime, transportation and industry. Its maintenance depends also upon the intelligence, interest and cooperation of individuals, families and local communities.

These recommendations are not widely at variance with those of the majority of the Committee on the Costs of Medical Care, arrived at in 1932 after a comprehensive study. The report of the committee says:

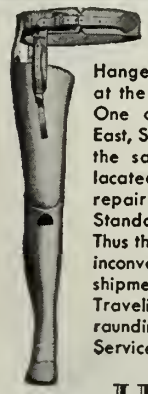
". . . (The) majority of the committee does not endorse the recommendation which would make health insurance a legal requirement for certain sections of the population. These members realize that such a step may ultimately be necessary and desirable in some states, but they believe that for most states and probably for almost all of them at the present time, it is much more desirable (a) to encourage voluntary measures for protection against wage loss during sickness, and (b) to develop voluntary insurance for medical care in conjunction with group practice, with hospital service and with the related measures recommend on the preceding pages. They are of the opinion that the difficulties of these plans can be controlled by a combination of professional and community effort, and that these plans hold the promise of steady extension in scope of service and in proportion of the population served. These members believe that the various payment plans (aside from compulsory insurance) if fully carried out, would: (1) Largely solve the problem of hospital costs which constitute about 50 per cent of the average family expenditure for the care of sickness; (2) provide adequately for many rural areas in which serious deficiencies of facilities exist at present; (3) make more nearly adequate provision than exists at present for the indigent and for the care of certain diseases of public importance; and (4) provide, through voluntary cooperative insurance . . . medical service to a majority of the 70,000,000 people living in industrial communities and in cities."

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1. Kasper, J. A. and Jeffrey, I. A.: A Simplified Benedict Test for Glycosuria, Amer. J. Clin. Pathology, *14*:117-21 (Nov.) 1944.

2. Haid, W. H.: The Use of Screening Tests in the Clinical Laboratory, J. Amer. Med. Tech., *8*:606-14 (Sept.) 1947.

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*Snyder, M. L., Kiehn, C. L. and Christopherson, J. W.: Mil. Surgeon, *97*: 380, 1945. • Shipley, E. R. and Dodd, M. C.: Surg., Gynec. & Obst., *84*: 366, 1947 • Mays, J. L.: J. Med. Assoc. Georgia, *36*: 263, 1947. • Curtis, L.: Surg. Clin. N. America, 1466 (Dec.) 1947.

1. A great growth in voluntary insurance both for hospitalization and for medical services.

2. State experimentation with compulsory health insurance in Rhode Island and California.

3. A growing willingness on the part of practitioners to cooperate in the development of prepayment plans and other devices to enable patients who so desire to regularize their payments for medical care.

4. A profound change in the amount and distribution of the earnings of the American people. This change greatly reduces the number who cannot afford adequate medical care if they desire to purchase it.

The experience of the United States since 1932 seems to have demonstrated the wisdom of these recommendations of the majority of the members of the Committee on the Costs of Medical Care. It would seem unwise at this time to substitute for these developments a system of compulsory health insurance by national law which would have the unfortunate tendency to freeze policies and eventually retard medical progress.

The import of these conclusions and recommendations to the work of the committee is apparent. Although the Brookings Institution has raised serious questions as to the necessity and practicability of governmental expansion in the field of medical and other health services by the imposition of a national, compulsory system, the Institution has outlined certain functional areas in which problems exist and which should receive full recognition in the course of the committee's consideration of the problem. The Brookings report fills a gap heretofore existing in the evidence available to the committee; it represents a concise and fundamental contribution which bears directly on the basic issues involved in the consideration of proposed health legislation.

Conclusions

In view of the considerations outlined hereinabove, it is the opinion of the committee that continued study of health problems, and proposed legislation relating thereto, is prerequisite to the formulation of basic recommendations in this field. The Committee on Labor and Public Welfare therefore unanimously report Senate Resolution 249 without amendment and recommend its approval.

SOUTHERN MEDICAL ASSOCIATION MEETING

The forty-second annual meeting of the Southern Medical Association will be held at Miami, Florida, October 25 to 28 with the Dade County Medical Association as sponsor.

Dinner Key was selected as general headquarters for the following: registration; all section meetings, scientific, technical and hobby exhibits; and motion pictures. Dinner Key (the former Pan American Air Depot) is ten minutes' ride from the general hotel headquarters and makes it possible to hold all activities in one location. There is parking space for over a thousand automobiles around the main building.

The evening programs, which will include the general public session, the general session and the president's ball, will be held at the Municipal Auditorium.

Hotel reservations will be handled by the Hotel Committee, Southern Medical Association Meeting, City of Miami Convention Bureau, 320 N. E. Fifth Srreet, Miami 32, Florida. Since the meeting is being held earlier than usual, all requests for rooms should be made immediately.

There will be twenty-one section meetings, two general sessions, one conjoint meeting (American College of Chest Physicians, Southern Chapter) and the "Miami Day" General Clinical Sessions.

BOOK REVIEW

THE ACUTE BACTERIAL DISEASES, THEIR DIAGNOSIS AND TREATMENT. By Harry F. Dowling, M.D., Clinical Professor of Medicine, George Washington University Medical Division, Gallinger Municipal Hospital. With the collaboration of Lewis K. Sweet, M.D., and Harold L. Hirsh, M.D. W. B. Saunders Company, Philadelphia. 465 pp. $6.50.

This is an entirely new book and is aimed to catch up with the knowledge of acute bacterial diseases and their treatment that we have acquired so suddenly in the last few years with the advent of the sulfonamides, penicillin and streptomycin.

Not only is the purpose of this book to help the practitioner in the diagnosis and treatment of what is new but also to hold onto that which is good of the old order. Diseases are grouped not only by their clinical features but also by their etiology, e. g., the diseases caused by cocci, by bacilli, by exotoxins. Virus infections seem to be sidestepped.

While pathology is dealt with lightly, laboratory examinations that could be helpful in diagnosis are well presented. The material of the book is well written. There are a number of good colored plates and helpful tables. The book should be of value to any practitioner who wishes to keep up to date on the diagnosis and treatment of infectious diseases. R. L. T.

UNIPOLAR LEAD ELECTROCARDIOGRAPHY, Including Standard Leads, Unipolar Extremity Leads and Multiple Unipolar Precordial Leads. By Emanuel Goldberger, B.S., M.D., Adjunct Physician, Montefiore Hospital, New York; Cardiographer and Associate Physician, Lincoln Hospital, New York; Clinical Lecturer in Medicine, Columbia University, Faculty of Medicine. With 88 Illustrations. Philadelphia: Leo & Febiger. 1947. Price $4.00.

This book of 182 pages teaches unipolar lead electrocardiography, and indicates its application in clinical electrocardiography. The fundamentals of electrocardiography are clearly reviewed in the first few chapters.

The author's contribution to this form of electrocardiography is the augmented unipolar lead. The relations between standard leads and unipolar extremity leads, and the relations between ordinary precordial leads and unipolar precordial leads are clearly defined. Some of the important advantages of unipolar electrocardiography for clinical use are: (1) the effect of changes in the position of the heart on the electrocardiogram, (2) the significance of abnormal Q waves, especially Q_3, (3) the differentiation of pulmonary embolism from posterior infarction, (4) the diagnosis of bundle branch block, (5) the diagnosis of right ventricular hypertrophy.

The first five chapters deal at some length with physics and trigonometry, which are necessary for proof of the validity of unipolar leads and of the Einthoven triangle theory. However, there are several typographical errors in the use of physics equations; and in the use of r, s, q, R, S, R′ S′ and R″ S″, which complicate the reading and interpretation. Another statement which Goldberger must modify is that "the algebraic sum of the three potentials from the left leg (Vf), the left arm (Vl) and the right arm (Vr) connected to a central terminal (Vt) is equal to zero potential." Actually the potential at the central terminal is not zero, but for practical purposes it may be considered as zero. The author frequently refers to Dr. Frank N. Wilson's original articles on unipolar electro-

cardiography. It is a scholarly text on the subject, and a necessary reference for electrocardiographers interested in unipolar electrocardiography. It will do much to popularize the use of unipolar leads in electrocardiography. R. P.

Practical Nurse. By Dorothy Deming, R.N., Consultant in Public Health Nursing, Merit System Unit, American Public Health Association; Formerly General Director, National Organization for Public Health Nursing. The Commonwealth Fund. New York. 1947. Price $3.00

This is a timely book and as the author states in the preface, there has been no other book written on this subject. It is pointed out that the help of the practical nurse has been welcomed since the dawn of time, but that only within recent years has the nursing profession recruited their services for hospital and home and recognized the need for their training.

A careful study has been made of the practical nurse, her past, her present and her possible future usefulness in the care of the sick.

From the historical development of practical nurse, the author proceeds to give statistics regarding the number and distribution of these nurses. She discusses their use in the various types of institutions from the mental hospitals, where they have been used most extensively, to the general hospital where their use is more recent and the public health and federal service where their use is in the developmental stage.

There is discussion concerning the schools for practical nurses, where and how they should be conducted.

The need for supervision and for protective legislation is discussed; that is protective for the sick as well as the person who is caring for the sick. "A distracted mother searching desperately for help in time of illness, may place the care of a child in hands far less skilled than those minstering to a sick dog, for a veterinary must hold a license to practice and must give evidence of training to secure that license." Valuable suggestions are given for a good nurse practice act.

It would seem that this book with its wealth of information should be a must on the reading list of those concerned with the care of the sick. F. M. C.

History of Medicine, A Correlative Text, Arranged According to Subjects. By Cecelia C. Mettler, A.B., Ed.B., A.M., Ph.D., Late Assistant Professor of Medical History, University of Georgia, School of Medicine, and Late Associate in Neurology, College of Physicians and Surgeons, Columbia University. Edited by Fred A. Mettler, A.M.,M.D., Ph.D., Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. With 16 Illustrations. Blakiston Company. Philadelphia, Toronto., 1947. Price $8.50.

The appearance of this posthumous volume upon the "History of Medicine" by Dr. Cecelia Mettler is another indication of an increased interest in this subject. Certainly not a majority but certainly a great many of the distinguished men of medicine have developed an interest in the history of medicine which frequently flowered into the written word in their later years.

The medical curriculum has never permitted much time for the subject and the extent of the student interest usually can be measured by the enthusiasm of the departmental head. In many of the large centers of the country there have always been medical history clubs of simon-pure devotees, hobby writers or collection hounds. Each one of these categories can be useful. When William H. Welch retired from pathology and engaged in his interest in medical history at Johns Hopkins a new wave of interest was developed throughout the country. When Welch chose Seachrist to succeed him he chose a man who had devoted his full life to medical history. Seachrist had developed the association of medical history and his *Bulletin of Medical History* has been always a fine journal. This association and its bulletin serve as sounding boards that have rallied more and more interest in medical history throughout the United States.

Missouri physicians have made significant contributions to the study of medical history. The Arthur F. Ball collection at the library of the St. Louis Medical Society has many rare items and now that Bob Schleuter has added his rarities and his living enthusiasm one may expect even more in this great medical center. The Logan Clendenning Library of Medical History at Kansas City contains many of the gems and much valuable source material. Both the late Logan Clendenning and the living Ralph H. Major who is also at Kansas City contributed much in their own writings both in book and monograph. The volume entitled "Behind the Doctor" by Logan Clendenning is a most useful, anecdotal synthesis of the actual historical events in medicine which live in methods of diagnosis and treatment. It is a fine introduction of the history of medicine, useful to the medical student and enjoyable to the lay reader.

Now comes this volume by Cecelia Mettler—which is not a chronologic history such as Garrison's, not the philosophic history such as Castiglioni. It is history of medicine by departments or specialties. Possibly the history of any specialty might be done quite differently by one who has lived within the specialty for years, followed the literature, acquired a full knowledge by examining the past in the written word and listened to the anecdotes and legendary gossip of older colleagues. It is well, however, to have such a bird's eye view and detached survey of the specialties by a student of medical history such as Cecelia Mettler must have been. Her bibliographic references are extensive. The index is most satisfactory. It is a distinctly different type of medical history and I believe that it will find a good reception among devotees of the subject and by all medical libraries. E. H. S.

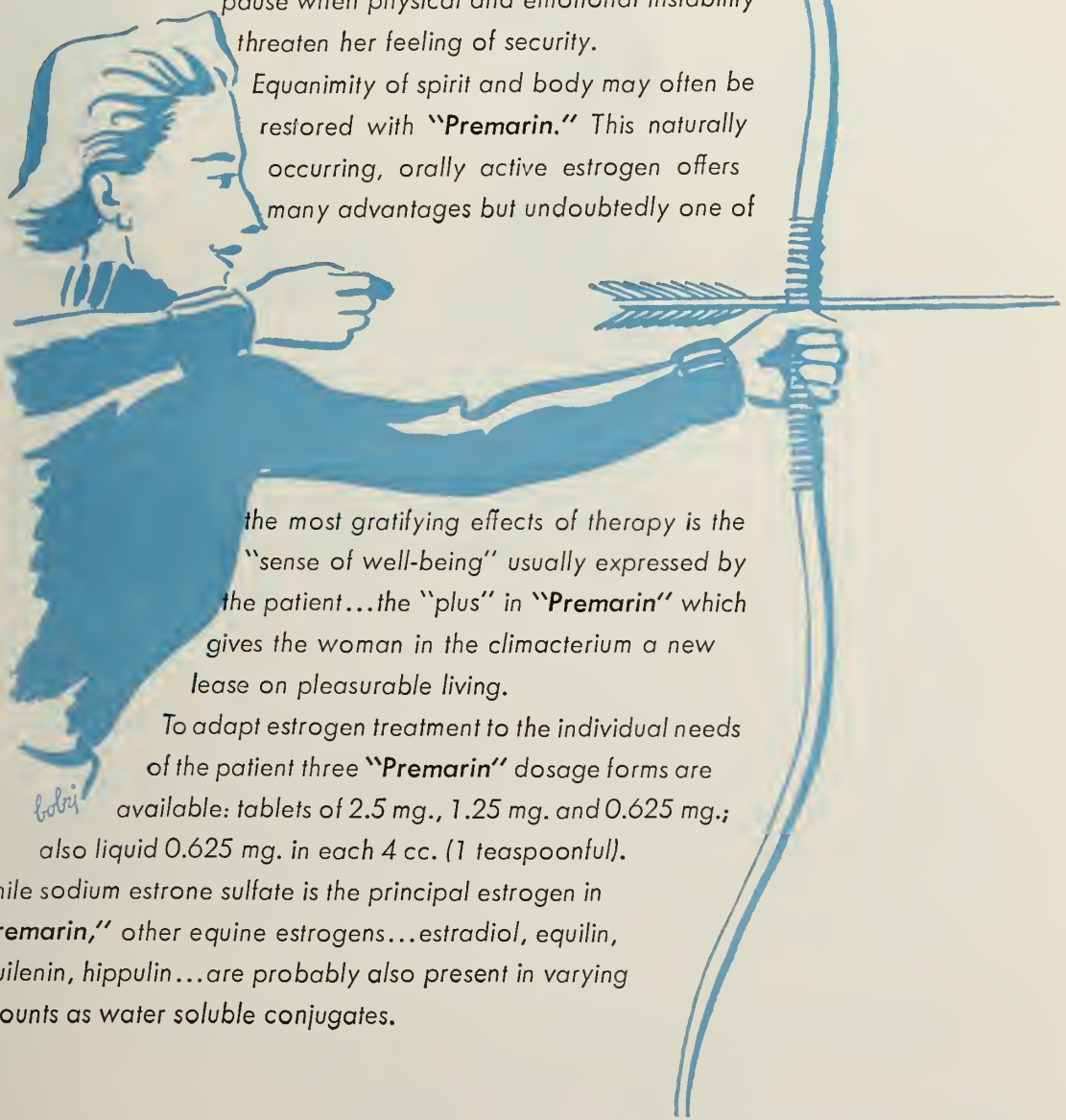
Diseases of the Nose, Throat and Ear. By William Lincoln Ballenger, M.D., Late Professor, School of Medicine, University of Illinois, Chicago; and Howard Charles Ballenger, M.D., Associate Professor and Acting Chairman of the Department of Otolaryngology, Northwestern University School of Medicine, Chicago; Surgeon, Department of Otolaryngology, Evanston Hospital, Evanston, Illinois; assisted by John Jacob Ballenger, M.D., Research Fellow in Otolaryngology, Northwestern University School of Medicine, Chicago. Ninth Edition, Thoroughly Revised; with 597 Illustrations and 16 Plates. Lea & Febiger. Philadelphia. 1947. Price $12.50.

This otorhinolaryngolic classic needs no introduction to the medical profession. The revisions, carried on entirely since the fifth edition by Howard C. Ballenger, have the added assistance of John J. Ballenger for this latest ninth edition. This is an admirable work covering the field suggested by its title in high degree of efficiency and completeness for a single volume. Samples of subjects discussed which have become important fields of otolaryngology are rhinoplasty, the fenestration operation (Lempert) for otosclerosis, allergy, broncho-esophagology (written by Gabriel Tucker, M.D., and Chevalier L. Jackson, M.D.), histamine cephalgia, nasopharyngeal radium therapy, facial nerve repair, audiometry, surgery for bilateral abductor paralysis of the larynx.

The time honored principles, operations and treatments of otolaryngology are, as previously, concisely and adequately described.

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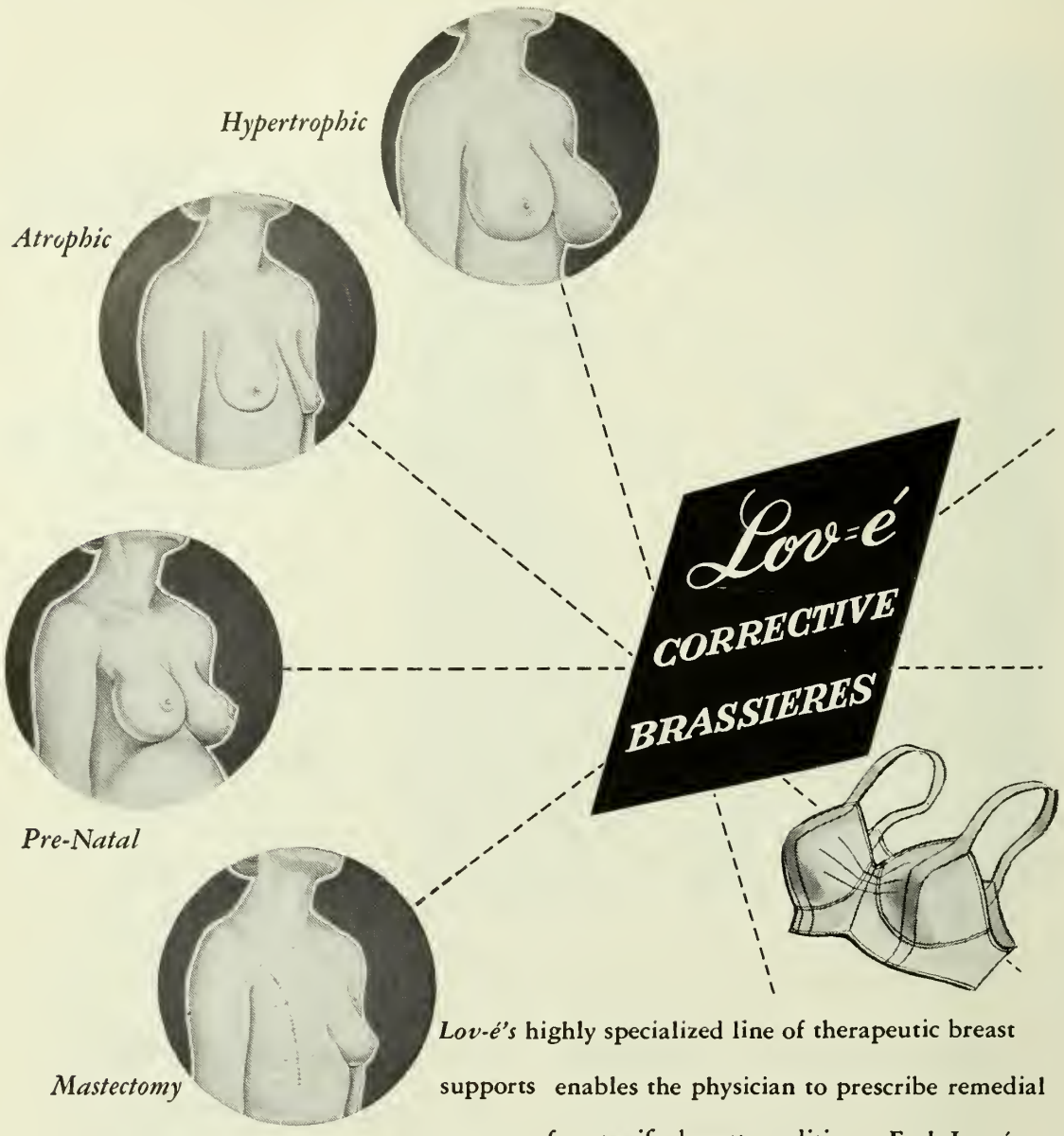
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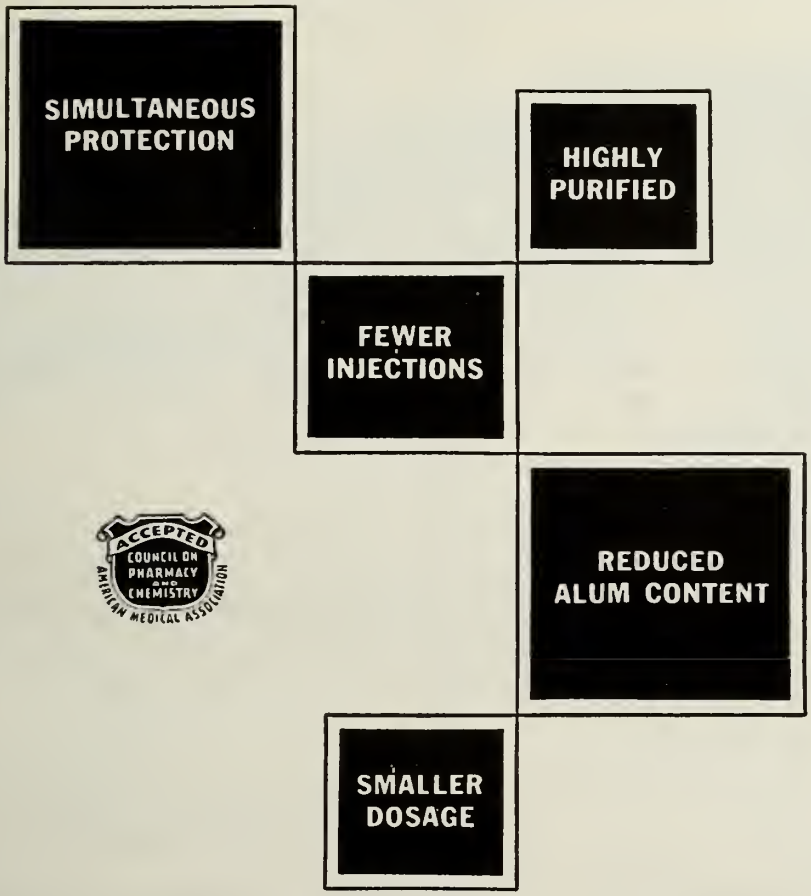
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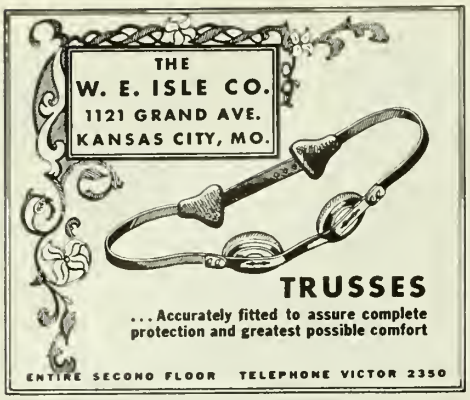
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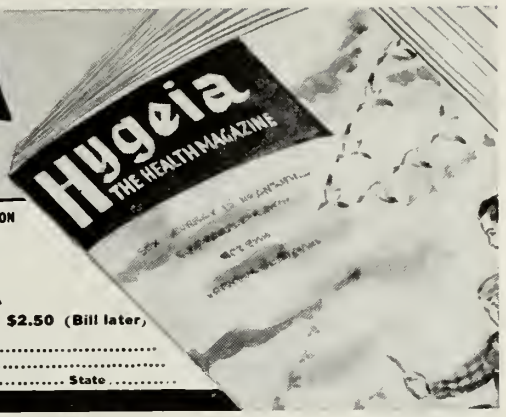
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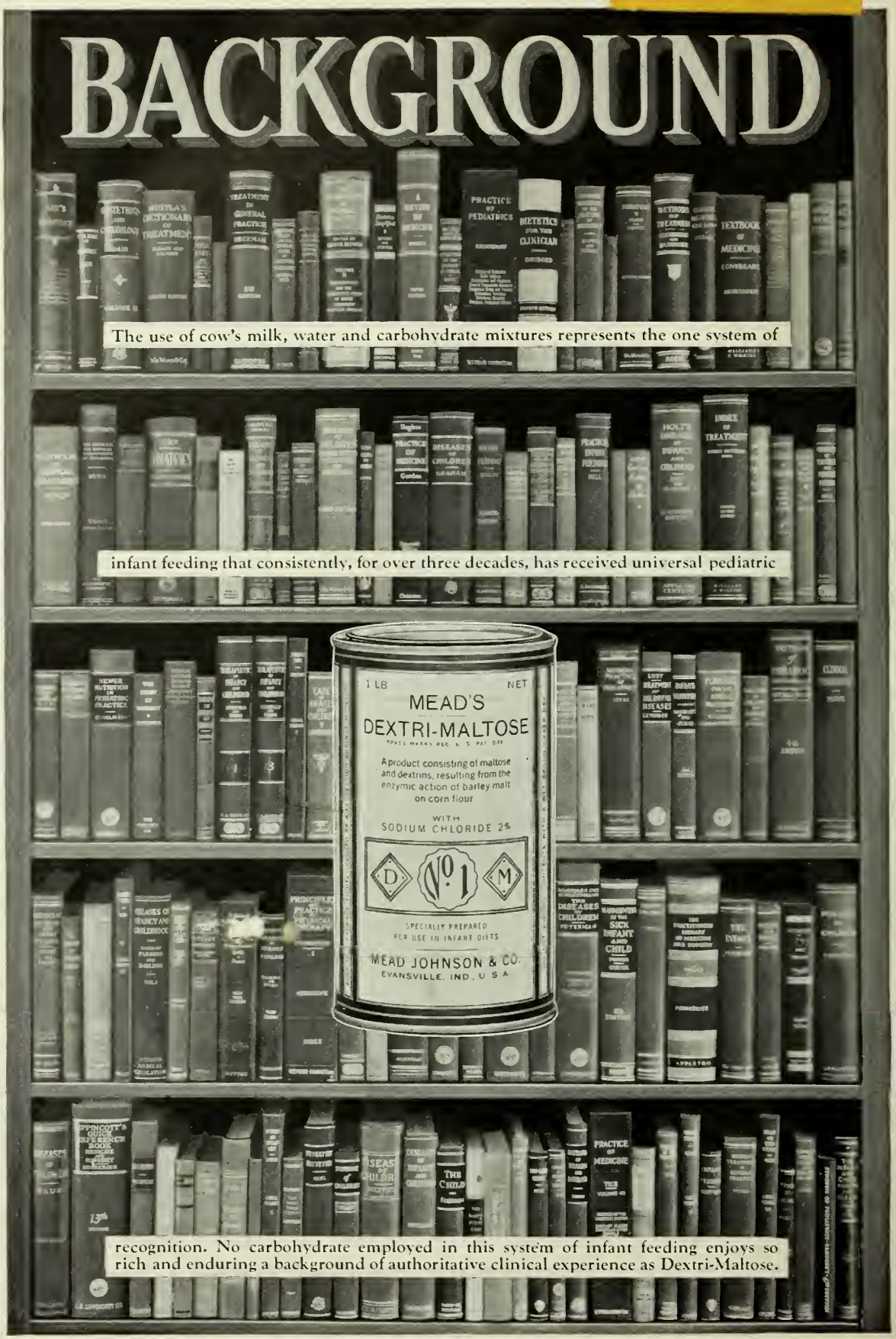
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(1) Follis, R. H.; Jackson, D.; Eliot, M. M., and Park, E. A.: Am. J. Dis. Child. 61:1 (July) 1943.

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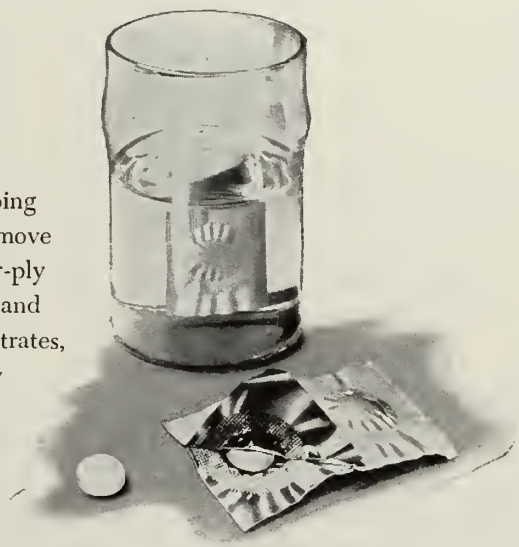
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1. Hoffman, W. S., and Volini, I. F.: Am. J. M. Sc. 213 520 (May) 1947

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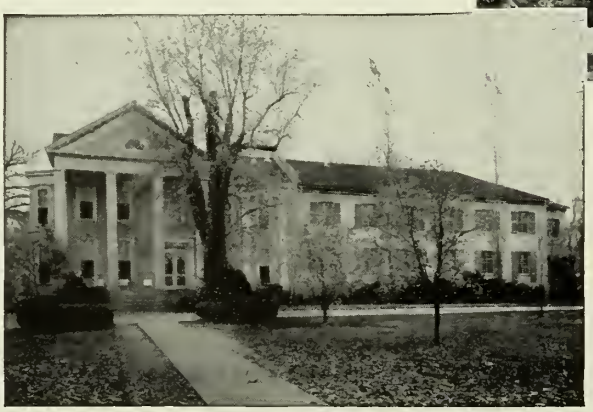
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1. Follis, R. H., Jackson, D., Eliot, M. M., and Park, E. A.: *Am. Jour. Dis. Child.*, 66:1, July, 1943.
2. Stearns, G.: *Jour. Lancet*, 63:344, Nov., 1943.

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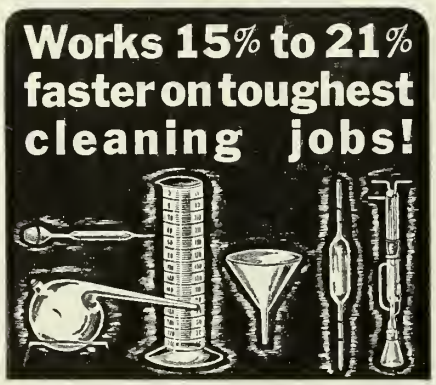
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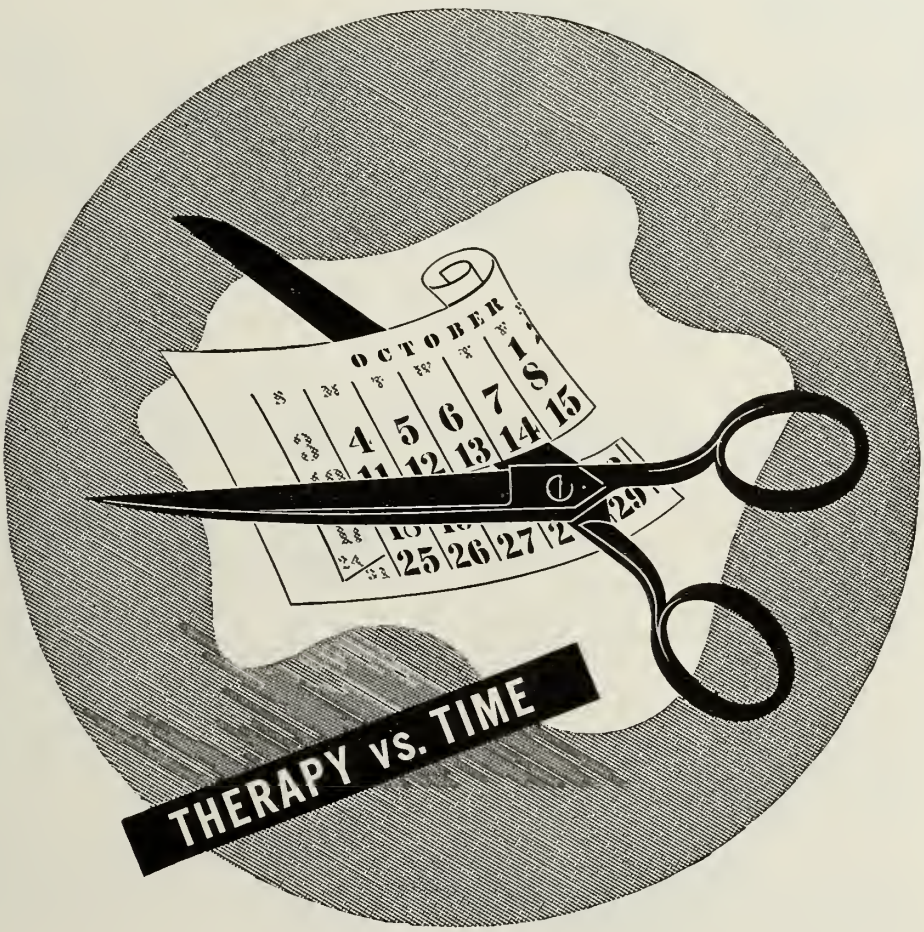
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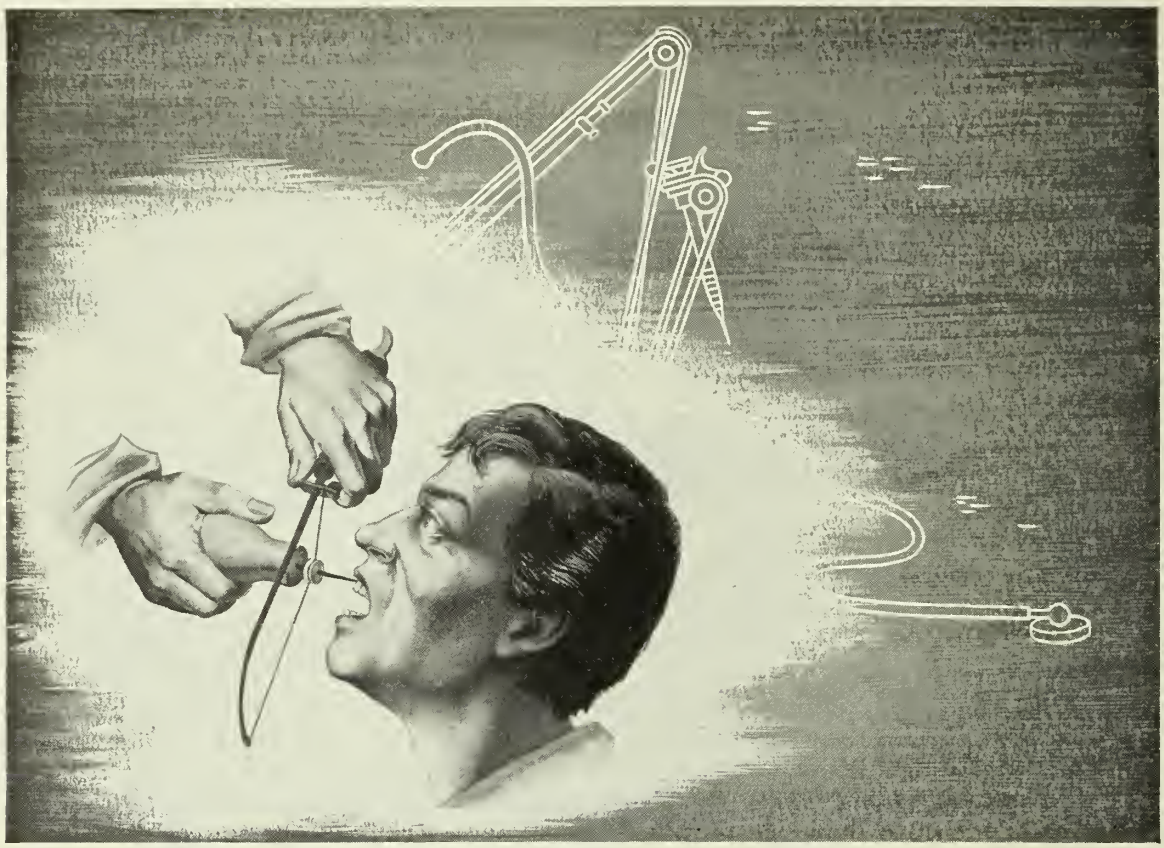
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VOLUME 45 | OCTOBER, 1948 | NUMBER 10

G. V. STRYKER, M.D., Editor
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SIGNS AND SYMPTOMS OF THE ACUTE ABDOMEN

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THE TERM "acute abdomen" is a general one. It denotes one of many conditions arising within the abdomen which cause sudden and serious concern to the patient and which the physician cannot easily determine to be trivial. It is obvious that the term has no great specificity. The addition of "surgical" to the title limits the scope some but does not make it any more specific. Actually, the acute abdomen is a surgical problem until proven that operation is not needed. So soon as a specific diagnosis is arrived at, the term loses significance except as a means of grouping varied conditions under a broad heading.

The management of a patient with an acute condition within the abdomen depends upon the possibility of making a specific diagnosis. Where accurate diagnosis is not possible before operation, it becomes necessary to attempt to differentiate between conditions in which operation will add hazard without helping those which require, or at least will not be greatly harmed by, operation.

In the first group are those conditions in which the abdominal signs and symptoms are the result of disease outside the abdominal cavity, and conditions within the abdomen in which a poorly timed operation may cause disaster. Of the difficulties outside the abdomen but which sometimes simulate intra-abdominal disorder for which operation is obviously not indicated are: coronary artery disease, pneumonia, sickle-cell anemia, infectious mononucleosis, diabetes mellitus, uremia, inflammatory disease of the meninges and interstitial pancreatitis. Of those conditions within the abdomen to which improperly timed operation may add hazard are acute small intestinal obstruction and spreading peritonitis.

Those conditions within the abdomen for which urgent operation is indicated are the result of inflammation, hemorrhage, perforation of a hollow viscus or obstruction to the blood supply of a vital intra-abdominal structure.

There are conditions for which operation is not required but which are not likely to be seriously affected by operation. These are pyelitis, seminal vesiculitis, ruptured Graafian follicle, nonspecific gastroenteritis, mesenteric lymphadenitis and intercostal neuritis. Since it is a general practitioner who first sees the majority of cases of acute abdominal disorder, it is he who is most frequently confronted with the problem of differentiation between these various conditions. The differential diagnosis in the acute abdomen is difficult enough in a well equipped and adequately staffed hospital. When seen in the home, the problem is usually pressing. It is common for house officers to be thoughtlessly critical of the general practitioner who sees the patient at home and makes a diagnosis which is found to be incorrect after the patient is studied in the hospital.

Successful evaluation of the acute abdomen depends on an understanding of symptom complexes. It is important to know the typical picture of the various acute intra-abdominal lesions even though the typical picture is not seen frequently. A careful and accurate history is essential because in most instances the history is more important than any other feature of the study. It is not unusual that one obtains a fairly clear-cut notion about the diagnosis from the history. Thus in acute appendicitis the onset of generalized abdominal pain with nausea and later localization of pain in the right lower quadrant is fairly clear-cut evidence which usually will be corroborated by the physical findings.

A history of bloating, fatty food dyscrasia and shoulder blade pain in a patient who complains of acute colicky pain in the right upper quadrant in-

Presented at the 90th Annual Session of the Missouri State Medical Association, March 14-17, 1948, St. Louis.

dicates cholecystitis whether the physical signs corroborate the diagnosis or not.

Worthwhile information often is gained from the localization by the patient of the position, radiation and severity of pain. Localization of pain about the umbilicus nearly always indicates tension on the mesentery of the small bowel whether this be due to a pelvic or midline appendix, a volvulus or an intussusception. A severe pain in the epigastrium is suggestive of difficulty in the lower end of the stomach, the duodenum or the head of the pancreas.

Of the physical signs in the acute abdomen, the most outstanding are localization of tenderness and splinting of the abdominal muscles. The contour of the abdomen is often of great importance. Auscultation of the abdomen usually gives valuable information regarding the activity of the gastrointestinal tract. Percussion of the abdomen may indicate the presence of fair amounts of fluid in the abdomen or of gaseous collections within the abdomen. Acute gastric dilatation is a condition which occurs not too rarely and may cause serious concern. Percussion of the left upper quadrant with the patient in a supine position often will reveal this condition which may simulate serious intra-abdominal disease.

In evaluating patients with acute abdominal disorders, it is important to recognize conditions which require early operation and in which delay is likely to lead to disaster. Actually such conditions are few in number. These conditions are the result of perforation of a hollow viscus, interference with the circulation to vital structures and inflammations which are likely to lead to peritonitis, and hemorrhage. It is important that these conditions be considered first if for no other reason than to rule them out. They include ruptured hollow viscus, more commonly the result of duodenal ulcer or diverticuli of the colon; acute appendicitis; rupture of the spleen or liver, and strangulation obstruction. Since these are serious problems I shall spend most of my discussion on them, especially since it is quite impossible to go over all possible intra-abdominal lesions in the time allotted.

Probably the most dramtic and urgent intra-abdominal surgical condition is that of perforation of a duodenal ulcer. The history of previous symptoms of a duodenal ulcer has been found in but 72 per cent of cases in a one year period. In 28 per cent of these cases the sudden onset of severe pain in the upper abdomen, the majority in the epigastrium, was the first indication of trouble. Vomiting occurred in but a small percentage of these cases (33 per cent). The most outstanding and consistent physical finding is board-like rigidity. This finding, however, is not always, but nearly always, present. In two of forty-three cases seen in the Detroit Receiving Hospital in 1947 the tenderness and rigidity was in the right lower quadrant and the patients were operated upon for acute appendicitis. The presence of a normal appendix with abundant milky fluid suggested that the true diagnosis was a ruptured ulcer. No harm was done since operation was strongly indicated anyway and the ulcer was approached through a second small incision placed directly over the first portion of the duodenum. Air was found beneath the diaphragm by roentgen ray in twenty-eight of the forty-three cases. A moist, bubbling friction rub in the right upper quadrant with loss of liver dulness is a sign which is seldom found. It often has been said that shock is associated commonly with a ruptured ulcer. This is a rare occurrence except late, the patient's blood pressure being maintained with a pulse which is only moderately quickened. The patient usually lies still because of the exquisite pain associated with motion.

Acute appendicitis is a condition which is seen commonly and with which, fortunately, the public is fairly well acquainted. Not only have the signs and symptoms been well publicized but also the importance of early treatment and the avoidance of catharsis have been stressed. This has done much to lower the mortality in this condition. The typical case is easy to recognize but atypical cases are much more difficult to diagnose. It is remarkable that so many cases of acute appendicitis have as the first symptoms moderate degrees of anorexia shortly to be followed by generalized pain in the abdomen. Nausea and vomiting usually follow the onset of generalized pain and usually precede the localization of pain over McBurney's point. The most common single finding in acute appendicitis is the localization of pain in the right lower quadrant and the localization of tenderness in that area. It is not uncommon for the patient to place the tip of one finger over the area of pain and this usually is over McBurney's point. Tenderness is typically localized here also.

The diagnosis of acute appendicitis with atypical signs and symptoms as already mentioned is not easy and the exclusion of other causes of pain may be equally as important as the search for unquestionable evidence of this disease. A pelvic appendix frequently causes no pain or tenderness in the right lower quadrant but rather pain about the umbilicus, the left side or, occasionally, no localization at all. Rectal examination, an exceedingly important procedure in examination of any case with an acute abdomen, frequently reveals the presence and position of the appendix because of tenderness or a mass. A high lying appendix may simulate duodenal ulcer or an acutely inflamed gallbladder; a retrocecal posteriorly placed appendix may simulate stone in the ureter or pyelitis. In the latter, the presence of small amounts of blood in the urine may cause more confusion. Either rebound tenderness referred to the area of the cecum (especially following sharp pressure over the descending colon) or extension of the thigh during pressure over McBurney's point may be helpful in arriving at a diagnosis.

Simple acute intestinal obstruction is no longer considered in our clinic as an acute operative emer-

gency. But when there is interference with the mesenteric blood supply of the intestine the time interval between onset of the obstruction of the blood supply to the gut and operation is an exceedingly important factor. In addition to the usual symptoms of simple acute intestinal obstruction the type of pain and the rapid change in the wellbeing of the patient are important suggestive symptoms. In addition to the usually intermittent crampy pain with borborygmi there is quite frequently a more uncomfortable sickening deep pain frequently localized beneath the umbilicus. The presence of rigidity and localization of tenderness, especially between cramps, should make one suspicious of a localized strangulated loop of bowel. When there is rapidly increasing pulse rate and decrease in the blood pressure in a patient who is "hard hit" out of proportion to the amount of distention, the likelihood of strangulation is great. When this is associated with a localized tender mass by itself or with asymmetry of the abdomen the diagnosis is almost assured. If, in addition to this, aspiration of the abdomen yields thin, dark mahogany, foul smelling fluid there can be little doubt but that the patient has interference with the mesenteric blood supply.

Aspiration of the abdomen for diagnostic purposes is not without danger and it is not recommended for routine use. However, when the aspiration is performed carefully the danger of perforating the intestine may be minimized. It is not good policy to insert the needle near an abdominal scar. I use a short bevel, number 26 Luer type needle and syringe. If the syringe is filled partially with air and as soon as the needle passes through the fascia of the muscle of the abdominal wall pressure is applied to the plunger, the air will be felt to escape easily once the peritoneal cavity is entered. The purpose of the injection of air as the needle traverses the peritoneum is to push away any gut which may be near. There are many who feel that the needle will push the gut away without observing this precaution, but I have felt that the injection of air gives an added factor of safety. If the gut is adherent to the peritoneum little harm is done from penetration with the small needle. If it is free, it is not likely to be penetrated and, if it is, there is little likelihood of leakage except in a distended loop. If the patient is to be operated upon anyway, little harm should result from such a small needle hole for the short time necessary to open the abdomen.

I am certain that strangulation obstruction can be differentiated from simple obstruction in the majority of cases. Of 332 cases of obstruction seen at the Detroit Receiving Hospital in 1938-1942, twenty-five were strangulating in type and nineteen of these were diagnosed early preoperatively.

Intra-abdominal hemorrhage, whether it be into the free abdominal cavity or into the hollow viscera, is a problem which requires careful surgical consideration. For those cases in which the bleeding is from the stomach or duodenum I have used a buffered thrombin solution in an attempt to stop hemorrhage. While I have been successful by this treatment in a few cases, I think it is fair to state that massive hemorrhage anywhere in the body can be controlled assuredly only by surgical means. The ligature is still the safest and most efficient means of controlling hemorrhage. While some cases of hemorrhage will stop without treatment it is difficult to determine those which will. The important symptoms and signs of severe intra-abdominal hemorrhage are those of acute blood loss, a suddenly developing feeling of weakness, dizziness, faintness, shortness of breath on mild exertion, pallor, decrease in blood pressure and increase in respiratory and pulse rate. When the source of the bleeding is the gastrointestinal tract, blood may be noted in vomitus or stool. There are as a rule no abdominal signs which give valuable aid in diagnosis. This latter is obviously a reliable diagnostic sign. When there is hemorrhage into the peritoneal cavity the source of the blood loss is less evident. Free blood in the peritoneal cavity does not as a rule cause much irritation to the peritoneum and it is, therefore, common to find the abdomen fairly well relaxed. When the bleeding is due to trauma the effects of the trauma may alter the tension within the abdomen. The diaphragm, however, appears to be sensitive to the presence of blood and it is not uncommon to find pain referred to the segment from which the diaphragm arises. When the bleeding is caused by spontaneous rupture of the spleen or an ectopic pregnancy, tenderness and slight rigidity may be the only abdominal findings. Trauma, which has caused injury to the liver or spleen, is usually associated with general signs of acute blood loss and the possibility of bleeding from these two structures must be considered. The localization of the site of the hemorrhage in a patient who has suffered severe injury is complicated by the fact that splinting of the abdominal muscles is often associated with injury to the back, or broken ribs, and generalized soreness is not unusual following injury from heavy moving objects. While it is usually possible by careful survey to determine whether acute and serious intra-abdominal bleeding is present, I am convinced that in cases in which there is any question of doubt, aspiration of the abdominal cavity gives good diagnostic support. I have in several instances saved a patient an exploratory laporotomy in cases in which there was marked tenderness over the liver with splinting but whose blood loss was actually from other sources. In other cases, exploration was indicated where there was doubt about the presence of free intra-abdominal bleeding before abdominal aspiration.

The importance of accurate diagnosis to differentiate specific entities from the general term, the acute abdomen, cannot be too strongly stressed. Acute surgical emergencies must be differentiated from those in which surgery might be harmful. Accurate diagnosis of surgical lesions frequently per-

mits localization of the incision and minimizes the trauma of the operation. In cases in which typical signs and symptoms are present, diagnosis is not difficult. In cases in which signs and symptoms are atypical the diagnois is more difficult and great care is required in evaluation, especially in the differentiation of surgical and nonsurgical lesions.

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MEDICAL ASPECTS OF THE ACUTE ABDOMEN

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A discussion of the medical aspects of the acute abdomen would be incomplete without a thorough consideration of the disturbances of function of all systems of the body. This is obviously impossible in a limited presentation of this type. The occurrence of disturbed physiology in any system may result in abdominal symptomatology mediated through the nervous system, or by means of alterations in the chemistry of the body. The abdomen may serve as a sounding board for disturbed physiology of extra-abdominal organs. The gastrointestinal tract may be the barometer of disease processes involving both extra-abdominal and intra-abdominal organs. Medical diseases involving the abdominal viscera may give rise to disturbed functions and consequent symptomatology closely simulating the symptom complexes of surgical diseases of the viscera. The differentiation of the two conditions may be difficult and may require the use of all available diagnostic adjuvants.

The diagnosis of abdominal symptomatology due to dysfunction of the various systems of the body is important and necessary in order to initiate the proper treatment and to avoid unnecessary surgery. This may not be possible in every case. A correct diagnosis may be reached in a great many diagnostically confusing cases by means of an accurate and complete history, where possible to obtain, an exhaustive study and a thorough evaluation of the patient and his symptomatology and the judicious use of laboratory and radiologic aids.

Diseases of the cardiovascular system may produce abdominal symptoms simulating acute organic disease of the abdominal viscera. Disturbances of function of the heart, aorta and peripheral arteries may express themselves through the occurrence of pain persisting at the local site of involvement, or referred to sites at a distance from the original focus of disturbance. The pain may be simultaneously local and referred. The reference of pain arising from disturbed physiology of the heart is mediated through the vagus and the sympathetic nerves arising on the left side from the eighth cervical to the fourth thoracic segments.[1,2] The seat of additional stimuli may be located also in lower segments on the right.

Acute pericarditis in its early stages may produce pain referred to the epigastrium. The severity of the pain may simulate closely the pain of perforated peptic ulcer. Nausea and vomiting may add to the probability of the latter diagnosis. The absence of shock in pericarditis may be of importance in eliminating the possibility of an acute abdominal catastrophe. The appearance of a pericardial friction rub within a few days will assist in establishing the proper diagnosis.

Coronary occlusion[3,4,5] with accompanying shock and precordial pain radiating to the epigastrium or to the right upper quadrant of the abdomen may result in a symptom complex similar to that of an acute gallbladder disease, a perforated peptic ulcer or an acute pancreatitis. Myocardial infarction occurring without thrombosis may give rise to recurrent episodes of abdominal distress or to a severe acute attack when the process is extensive and persistent. The frequent coexistence of myocardial and gallbladder disease may create additional diagnostic problems. The occasional radiation of gallbladder pain to the lower sternal area, to the chest, shoulder and arms may produce a confusing clinical picture.

Coronary occlusion may be differentiated from acute gallbladder disease by the following facts: a history of antecedent precordial pain of an anginal nature appearing as a result of excitement or exertion, the presence of hypertension in some cases with cardiac enlargement and clinical signs of myocardial disease, the usual abrupt onset, the pressing constrictive character of the pain, the localization of the pain in the early stages to the substernal area with radiation to one or both shoulders and arms and to the epigastrium after varying intervals. Epigastric radiation of the pain may occur early and may exist as the sole expression of the attack. Acute shock is frequently present in coronary occlusion. It is accompanied by a progressive fall in blood pressure and evidence of circulatory impairment or failure, an elevation of temperature, a leukocytosis and an increased sedimentation rate.

The pain of gallbladder disease has a more insidious onset with localization in the midepigastrium.[6] The pain of biliary colic may be stabbing, spastic or crescendo in type, radiating more frequently to the right side of the abdomen and to the right subscapular area. The history of previous attacks of biliary colic may be of value in diagnosis. Vomiting is associated more frequently with biliary disease. It may occur, however, with coronary occlusion. The presence of local abdominal tenderness and rigidity with abdominal distention are of

Presented at the 90th Annual Session of the Missouri State Medical Association.

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direct value in the diagnosis of acute gallbladder disease.

The electrocardiogram is invaluable in differentiating these two syndromes. Precordial leads and serial tracings should be taken to study the location and the progression of the myocardial pathologic condition. The signs of infarction may be delayed. The absence of classical signs in the early stages will not exclude a possible diagnosis of coronary occlusion. Minor alterations in the S-T components may be of some significance before the more definite signs of occlusion make their appearance.

The differentiation of coronary occlusion from perforated peptic ulcer may be based upon the positive signs of occlusion, the absence of a history of antecedent recurring gastrointestinal symptoms suggestive of peptic ulcer and the absence of the board-like abdominal rigidity characteristic of the latter condition.[7]

Coronary occlusion and acute hemorrhagic pancreatitis present strikingly similar clinical patterns.[8,9] Electrocardiographic changes simulating the changes of coronary thrombosis may be present in the latter disease. The diagnosis may be made by the more pronounced abdominal signs, the increase in serum amylase and serum lipase values and by the associated glycosuria in acute pancreatitis.

Myocardial insufficiency with right ventricular failure and venous engorgement of the liver may simulate acute hepatic or gallbladder disease. Hepatic congestion may be sudden and extreme with severe pain and tenderness in the right upper quadrant. The accompanying physical signs of congestive heart failure will aid in diagnosticating the condition. Dissecting aneurysm of the abdominal aorta is characterized by severe epigastric pain or by generalized abdominal pain.[8] The pain is usually at the level of the dissecting process. A diagnosis may be made by the presence of an accompanying hypertension, the existence of a pulsating abdominal mass and evidence of nerve root involvement at the site of the vertebral erosions.

Embolic infarction of the abdominal viscera results in an acute abdominal syndrome varying in character and degree with the location and the extent of the infarct.[5,8] Mesenteric embolism is characterized by sudden severe abdominal pain with rapidly developing signs of intestinal obstruction. A similar but less severe pain may arise as a result of spasm of the mesenteric arteries. This latter syndrome is referred to as abdominal angina. The pain is transient and may be variable in location. The absence of the signs of intestinal obstruction may serve to differentiate this condition from mesenteric embolism.

Infarction of the spleen producing pain in the left upper quadrant is accompanied by splenic enlargement, tenderness, fever and leukocytosis. The syndrome may simulate gastric or colonic disease and may at times be confused with acute pleuritis, left lower lobe pneumonia or perirenal pathologic conditions. Renal infarction also may simulate acute abdominal disease.

Acute infections of the respiratory tract involving the lungs, pleura and diaphragm may give rise to pain which is referred to the abdomen. The symptom-complex occurring with these infections may simulate acute diseases of the abdominal viscera. The pain reference is mediated through the nerves of the sixth to twelfth thoracic segments, the first lumbar segment, the phrenic nerves and the celiac plexus.[1,2] An acute infectious process that produces stimulation of these segmental nerves will result in pain and motor phenomena over their distribution. Irritation of the diaphragm which is supplied in its medial half by the phrenic nerves and in its lateral half by the thoracic nerves may result in widespread and diverse reference of pain.

Acute lobar pneumonia involving the right lower lobe complicated by pleuritis may be accompanied by pain referred to the shoulder, to the right upper and lower quadrants of the abdomen and to the epigastrium.[10,11] The syndrome associated with pneumonia and consisting of abdominal pain, nausea, vomiting, fever, tenderness and rigidity may be confused with the syndromes of acute appendicitis, acute gallbladder disease and perforated peptic ulcer. It is important to eliminate an acute respiratory disease as the cause of the abdominal symptoms before surgery is undertaken. Abdominal surgery performed in the presence of lobar pneumonia is attended by a high mortality rate. This is especially true in children in whom this mistake in diagnosis is not uncommon. The presence of tenderness and muscle guard in the right lower quadrant occurring in pneumonia may suggest the possibility of a ruptured appendix with peritonitis.[8]

The diagnostic symptoms and signs that may aid in the identification of an underlying pneumonia may be self evident but may be overlooked in the tension of the moment because of the necessity for prompt surgical intervention in the presence of an acute appendicitis. The patient with pneumonia is more acutely ill, the ascent of the fever is more rapid and abrupt, reaching a higher level than in appendicitis, and the leukocytosis is more marked. The early pleural involvement with consequent pain in the chest, the rapid grunting respiration, flushing of the facies on the affected side, use of the accessory muscles of respiration and cough, with blood-tinged sputum, when present early, may serve to attract the attention of the clinician to the possibility of pulmonary involvement.

The physical signs of early pneumonia may be minimal or absent. This is especially true when the lesion is located in the central portion of the lobe. The use of the roentgen ray and fluoroscopy may be of assistance in establishing the diagnosis.

The pleuro-pulmonary symptom complex with radiation of pain to the right upper quadrant may simulate acute gallbladder disease. Recurrent attacks of acute diaphragmatic pleurisy involving the

lateral half of the diaphragm, frequently seen in chronic pulmonary tuberculosis, may create diagnostic problems. Jaundice accompanying lobar pneumonia may add further to the difficulty of differentiation of these two diseases. The presence of the symptoms and physical signs of pneumonia and pleuritis with limitation of thoracic expansion on the affected side, intercostal tenderness and the relief of pain secured by immobilization of the chest wall will diagnosticate this disease.

The epigastric and shoulder tip radiation of pleuro-pulmonary pain when accompanied by nausea and vomiting may resemble the syndrome of a perforated peptic ulcer. The history of the site of the initial pain and the relative severity of the coexisting pains in the chest and epigastrium may aid materially in the diagnosis. In pneumonia the pain most frequently originates in the chest and is referred to the epigastrium. The pain of perforated gastric ulcer usually originates in the epigastrium, radiating to the back, the shoulder tip and to other sites as the peritoneal irritation progresses.

Disease processes in the nervous system may be accompanied by abdominal manifestations which may simulate acute abdominal disease. The gastric crisis of tabes is perhaps the most striking of the manifestations of central nervous system disease.[8] The sudden onset of the crisis with severe epigastric pain radiating to the back, into the chest or lower abdomen and accompanied by nausea and persistent intractable vomiting may produce a clinical state suggestive of perforated peptic ulcer. The occasional girdle character of the pain may serve to differentiate the former disease. The history of antecedent attacks with variation in symptomatology may be important also in diagnosis. Abdominal rigidity is not constant in gastric crises in contradistinction to the abdominal signs accompanying peptic ulcer. Intestinal peristalsis is usually active in the tabetic crisis. The presence of additional tabetic symptoms, the physical signs of involvement of the nerves of the special senses and the spinal nerves with the common alterations in the reflexes and the evidence obtained from serologic examinations of blood and spinal fluid should assist in confirming the diagnosis.

Renal colic accompanied by nausea and vomiting may give rise to a syndrome sufficiently acute as to simulate abdominal disease.[12,13] The similarity of the symptoms of right sided colic and acute appendicitis may create confusion in diagnosis. Acute pyelitis with chills, fever and pain may resemble even more closely the syndrome of acute appendicitis. Intermittent hydronephrosis of the right kidney may produce a similar syndrome. Perinephritic abscess may give rise to pain radiation and abdominal symptoms simulating the symptoms of acute gallbladder disease.[14] The presence of tenderness in the region of the twelfth rib on the affected side, the radiation and character of the pain, the clinical course of the disease process and the urinary findings of pus, blood and albumin may serve to differentiate renal disturbances from intra-abdominal disease. The urinary findings may be misleading when an inflamed appendix lies in close proximity to the urinary tract.

The abdominal manifestations of allergy are protean and when present in either an acute or chronic form may simulate or may serve to obscure the symptoms of organic lesions of the abdominal viscera.

The pathologic physiology of allergy is manifested by smooth muscle spasm, vascular disturbances and increased capillary permeability.[15] The various segments of the gastrointestinal tract or the entire tract may be involved in the phenomena of allergy. The abdominal organs likewise may participate in the shock reaction. The type and degree of functional disturbance of the viscera will depend upon the organ involved, the predominance of one or more of the above manifestations and their relative intensities.The evidence of vascular disturbances, both visceral and dermal, will vary with the degree of hemorrhage, congestion or exudation. The consequent symptomatology of involvement of the hollow viscera may give evidence of this fact.

The clinical manifestations of an acute abdominal allergy may be in the form of severe abdominal pain with nausea, vomiting, abdominal distention, hematemesis and diarrhea.[16] The pain is often colicky in type and will vary in location depending upon the site of involvement. These symptoms may be accompanied by the physical signs of abdominal rigidity or spasticity, tenderness, an elevation of temperature and in some cases a marked leukocytosis.[17]

The severity of the symptoms may be such as to suggest the possibility of a perforated peptic ulcer. The presence of hematemesis occurring with gastric congestion and hemorrhage may render the diagnosis even more difficult. The coexistence of an acute pylorospasm due to mucosal edema may increase the intensity of the gastric symptoms.

Allergic involvement of the colon may assume an acute or a subacute form. In the acute form with pain due to severe colonic spasm localizing in the right lower quadrant and accompanied by abdominal distention and constipation the possibility of an acute appendicitis must be considered.

Symptoms suggestive of gallbladder or biliary tract involvement also may arise as the result of the ingestion of an offending allergen. The pain in the right upper quadrant or epigastrium may be dull or severe. Nausea, vomiting and distention may accompany the pain and tenderness may be present on palpation over the gallbladder area. The acute character of this reaction renders the diagnosis more difficult when there is a history of recurrence of the attacks and when in the interval between the attacks there is an existent gastric syndrome which could be attributed either to chronic cholecystitis or to gastric allergy.

Eosinophilia is a rather constant finding in acute allergy. It may be absent. When present it is of value in diagnosis. Eosinophilia may be present in

the mucus discharges. The leukopenic index is of doubtful diagnostic value, although it may serve as a correlated test.[17] Leukocytosis and neutrophilia are uncommon accompaniments of the acute allergy state, although they may be present.[14] Their absence may serve as a negative diagnostic aid in eliminating acute organic disease.

The response of the patient to the use of sympathicomimetic or adrenalin like drugs during the attack and the use of antihistaminics in the interval between attacks may give valuable information as to an underlying allergic state.

Skin tests and elimination diets may be of value when used in the interval between attacks, but serve no valuable purpose during the acute attack. The proper interpretation of skin tests when used in selected cases is important in their ultimate evaluation as evidence of a causal relationship of the reacting allergen to the presenting syndrome. Injudicious application of the knowledge obtained may prove to be harmful or unnecessarily distressing to the patient.

Henoch's purpura or nonthrombocytopenic purpura in which there may be a demonstrable allergic etiology may present the clinical manifestations of acute abdominal disease.[15,19] Vomiting, abdominal distention, pain, spasticity of abdominal muscles and fever with leukocytosis are the outstanding symptoms. The pain is inconstant in character, location and intensity. The diagnosis of this disease may be based on the history of similar attacks recurring over a period of years, the spontaneous appearance of the attacks, the variability of the pain, the presence of diarrhea with or without the melena and the occurrence of the purpuric eruption with or without joint manifestations during the acute attack.

The metabolic diseases with which abdominal pain may be found more commonly are diabetes mellitus, acute adrenal insufficiency and hyperthyroidism. The pain occurring in the course of uncontrolled diabetes is associated often with an episode of acidosis.[20] It may be localized or general and is frequently severe simulating the pain of acute appendicitis or peritonitis. Vomiting may be an early symptom and abdominal tenderness may be present. Fever and leukocytosis are constant accompaniments.

The possibility of the coexistence of acute appendicitis and diabetic acidosis increases the necessity for a prompt and accurate differential diagnosis.[21] The diagnosis of diabetic acidosis offers little difficulty to the clinician. The history of previous treatment for diabetes, the characteristic odor of the breath, the elevation of the blood sugar and the presence of glycosuria and acetonuria will establish the diagnosis. Therapeutic procedures initiated to combat the acidosis will usually result in the rapid disappearance of the general symptoms of acidosis and the associated abdominal manifestations. The persistence of acute abdominal symptoms following the control of the acidosis may serve to confirm the diagnosis of acute appendicitis.

Adrenal insufficiency[22] presents a varying symptomatology characterized by exacerbations and remissions. The acute crisis is an expression of severe exacerbation which often is manifested by a shock-like state, vomiting, diarrhea, abdominal pain and rigidity. The symptom complex may simulate acute abdominal disease. The diagnosis may be made by means of a history of progressive weakness, pigmentation of skin and mucous membranes, hypotension, hypoglycemia, a reduction in plasma sodium and an elevation of blood potassium. The response of the patient to the injection of adrenal cortical extracts with the simultaneous administration of sodium chloride may be of positive but somewhat delayed diagnostic value.

The abdominal syndrome accompanying the crisis of active thyroid intoxication may be confused with the syndrome of an acute abdomen. Pain, more frequently of a general character, tenderness and vomiting may be the chief symptoms. This condition may be diagnosticated somewhat easily by the existence of the classical symptoms of hyperthyroidism and the response of the symptoms to the administration of iodine.

The abdominal manifestations of acute intoxication with lead may be severe enough at times to create a clinical state simulating intra-abdominal disease.[23] They may be confused with the symptoms of acute appendicitis. The pain most commonly is intermittent and cramping in character with a generalized abdominal distribution. It may be localized about the umbilicus. Nausea, vomiting and diarrhea may be present. Abdominal spasm and tenderness of a mild degree usually accompany the attack. The history of exposure to lead is a most important fact in diagnosing this condition. A history may be difficult to obtain in children in whom contact with lead painted toys may be overlooked by the parents. The proximity of the attack to the time of exposure is inconstant. The frequency of occurrence of the attacks is variable. The absence of fever and leukocytosis may be a significant differentiating fact. The presence of a lead line on the gum margins is suggestive of previous exposure to lead but does not necessarily establish the relationship of this drug to the existing acute syndrome. Basophilic stippling of the red cells, with reticulocytosis are constant findings in the blood smears. Chemical determinations of lead in blood and urine may aid in the diagnosis.

The use of plasmochin in the treatment of malaria results occasionally in the production of an acute abdominal syndrome which is characterized by severe pain localizing in the epigastrium and in the right upper quadrant accompanied by nausea, vomiting and prostration. The pain may be colicky or stabbing in type simulating a gall stone colic. The differential diagnosis of these two clinical conditions may be difficult. The withdrawal of the drug

with the consequent relatively rapid improvement may serve to establish the diagnosis.

Blood dyscrasias may be associated with abdominal symptoms of vague and indefinite character. Infarction of the spleen occurring in the course of the leukemias or as a manifestation of polycythemia may present an acute abdominal syndrome. The hemolytic crises of chronic familial hemolytic anemia are characterized by jaundice, fever and abdominal pain. This triad of symptoms is similar to the symptoms of an acute gallbladder disease. The two diseases may coexist. The diagnosis of the crisis is based upon the presence of the symptoms as mentioned, the enlarged spleen and liver, the progressive and rapid reduction in the erythrocytes which may reach the level of 1,000,000 in severe cases, the reduction in hemoglobin and the blood manifestations characteristic of this disease.

Sickle cell anemia may give rise to crises which simulate acute abdominal disease.[24] The abdominal pain of the crisis is sudden in onset, usually diffuse with localization in the left upper quadrant as a result of perisplenitis following multiple splenic infarcts. Rigidity, tenderness and distention of the abdomen and fever may be present. Pain in muscles and joints associated with hemic cardiac murmurs suggest a rheumatic affection. The blood findings in the crises are those of a normachromic anemia. Evidence of bone marrow activity is apparent and leukocytosis is present. The demonstration of sickling in the fresh drop is pathognomic of this disease.

Amebic dysentery either in the acute fulminating or the acute relapsing form may produce severe abdominal pain with fever, diarrhea and tenesmus. The onset of the disease is often abrupt and violent, with symptoms closely simulating an abdominal catastrophe. Diarrhea may be severe with numerous stools. The stools contain blood and mucus and some fecal matter. The history of previous attacks as may be found in the acute relapsing form will be of value in diagnosing this condition. The presence in the stools of trophozoites and cysts of entameba histolytica is diagnostic. In the absence of the parasites in the stool a complement fixation may be of value in diagnosis.

Acute amebic hepatitis occurring with a sudden onset, high fever, enlarged and tender liver, leukocytosis and pain localized to the right upper quadrant of the abdomen or referred to the chest, epigastrium, right lower quadrant or right shoulder may simulate acute diseases of the viscera located in relation to these areas of pain reference. The existence of concomitant intestinal symptoms due to amebic dysentery will aid in establishing the nature of the hepatic involvement. The absence of intestinal symptoms may render the diagnosis more difficult. A history of unexplained recurrent diarrhea may direct the examiner to a closer study of the stools to determine the presence of the parasites. In doubtful cases the use of emetine may serve as a therapeutic diagnostic aid.

Bacillary dysentery in the acute form may give rise to an abdominal syndrome suggestive of an acute abdomen. The abdominal pain may be severe and colicky in type with a regional or a general distribution. An appendiceal form has been described in which it may be impossible to differentiate the symptoms from those due to an acute appendicitis. The diarrhea and tenesmus appear early in the attack and the stools rapidly assume characteristics typical of the disease. The diagnosis of this disease will rest upon the character of the stools and the presence of positive stool cultures. Agglutination tests are of doubtful or delayed value.

Malaria may be associated with an acute perisplenitis simulating acute abdominal disease. The paroxysms of chills, fever and sweats, severe pain in the left upper quadrant and the gastric symptoms of nausea and vomiting suggest a septic process. Perinephritic abscess may be suspected. The positive diagnosis will depend upon the detection of the parasites in the blood smears. Malaria should be considered as a possible cause in all febrile syndromes accompanied by abdominal symptoms, especially when these occur in patients who present a history of residence in malarialized areas or in ex-service men who have a history of previous infestation with the parasite.

Acute infectious gastroenteritis with which the virus or influenzal enteritis may be grouped symptomatically is characterized by nausea, vomiting, diarrhea, fever and moderate to severe abdominal pain. Tenderness and muscle guard may be present. The syndrome may simulate acute diseases of the abdominal viscera. The differential diagnosis will be aided by the history of the onset, the character and the progression of the symptoms. The onset of diarrhea and tenesmus in the presence of abdominal pain of an indeterminate character may assist in eliminating acute abdominal diseases. The absence in this disease of the stool findings characteristically present in amebic and bacillary dysentery will serve to differentiate it from these two diseases.

Mesenteric lymphadenitis frequently is confused with acute appendicitis. The pain in the right lower quadrant with associated nausea, vomiting and diarrhea make a preoperative diagnosis of this condition difficult. The diagnosis is usually made at operation.

The functional intestinal disorders are characterized by a multiplicity of symptoms and abdominal manifestations which may suggest an equal multiplicity of acute abdominal diseases. The ultimate diagnosis of the underlying neurosis responsible for the disorders may necessitate exhaustive study and the critical elimination of all possible organic diseases. The clinician must possess unbounded patience and courage in the pursuit of these eliminative studies. He may be assisted in the diagnosis by the character of the pain. The variability in the location of the pain may give some clue as to the psychogenic basis for the syndrome. The existence

of nervous tension, strain or worry preceding the onset of the attacks may be valuable evidence in arriving at a diagnosis.

In the limited discussion of this important subject an effort has been made to present the medical diseases most commonly producing an abdominal syndrome that might be mistaken for surgical diseases of the abdominal viscera. There are other medical diseases of extra-abdominal and intra-abdominal organs that have not been included in this discussion due to the limitation of time and the relative infrequency of occurrence of these diseases. Additional diseases, to mention only a few that may produce visceral pain, are lesions of the spinal cord or vertebral column,[25] periarteritis nodosa, disseminated lupus erythematosis, biliary dyskinesia, peritoneal syndromes,[26] migraine, involvement of the rectus muscles following severe strain,[27] myositis and fibrositis of the psoas muscles,[28] hypoglycemia[29] and mononucleosis with abdominal adenopathy.[30]

These diseases together with those described more completely in the body of the discussion may give rise to syndromes that tax the diagnostic ability, the ingenuity and the experience of the clinician. The necessity for a prompt diagnosis arises in conjunction with medical diseases which are associated with acute abdominal syndromes because an early diagnosis will determine the therapeutic course to be followed and may eliminate unnecessary surgery.

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FIND BLOOD TRANSFUSIONS EFFECTIVE FOR HEMOPHILIA

Blood transfusions are effective in controlling hemophilia over long periods of time, report two researchers from the Medical Research Laboratories, Beth Israel Hospital and the Department of Medicine, Harvard Medical School, Boston.

Writing in the September 18 issue of *The Journal of the American Medical Association,* the researchers—Benjamin Alexander, M.D., and Greta Landwehr, B.S. —say that "observations on patients treated over a period of 10 to 20 months indicate that this approach provides amelioration of the bleeding tendency."

Hemophilia occurs mostly in men, although women "carry" the disease and transmit it to their sons. Slight accidents, which would have little effect on a normal person, may cause fatal hemorrhage in persons with hemophilia.

Four patients with the disease were given blood plasma three to four times weekly by the researchers. The blood transfusions were always followed by a drop to normal or nearly normal in the time required for the patients' blood to clot, says the article. Two of the patients treated who had not been able to take part in active sports played baseball and basketball after receiving blood plasma.

Of the ten reactions which the researchers observed during the study, only four were moderately severe or severe with symptoms of chills, drop in blood pressure, and headache. This incidence of reactions was only slightly more than 1 per cent, the researchers say. One patient developed jaundice, probably from the transfusions, they believe.

Blood plasma is effective against hemophilia only as long as transfusions continue to be given, and the treatment does not cure the underlying condition of the disease, the article emphasizes. Yet this treatment is the first reported which is effective in controlling hemophilia over a long period of time, the researchers point out.

SURGICAL ASPECTS OF THE ACUTE ABDOMEN

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The acute surgical abdomen is recognized as a clinical syndrome covering many acute conditions arising therein. In no field of surgery is the relationship between the mortality and the time elapsing before operation so close as here; and, in general, the fate of many acute surgical emergencies is decided during the first twenty-four hours. Since medical and surgical conditions during the first few hours may present identical clinical pictures, there is a grave responsibility placed upon the physician or surgeon who sees these patients during that time. The cardinal principle in handling these patients is early diagnosis and the institution of appropriate treatment. Frequently one cannot arrive at the correct diagnosis within the first few hours, but it is essential to make a decision as to whether the situation is one that is more safely operated upon than treated expectantly until the diagnosis is obvious.

This discussion will be limited to the surgical aspects of the more common conditions encountered.

ACUTE ABDOMINAL EMERGENCIES

The following are the most common causes for surgical interference and have as a common denominator acute abdominal discomfort.

1. Traumatic injuries.
2. Acute appendicitis.
3. Acute cholecystitis.
4. Gastric and duodenal lesions.
5. Intestinal obstruction.
6. Extra-uterine pregnancy.
7. Torsion of ovary.
8. Acute diverticulitis.
9. Mensenteric thrombosis.
10. Intussusception.
11. Pyloric stenosis.
12. Volvulus.

NONOPERATIVE EMERGENCIES

The following are fairly common causes of abdominal discomfort but do not require emergency surgery. Some of them will require operation at a later date, or at a time of election. In other words, if one can be sure of the diagnosis of these conditions one can await developments.

1. Acute pancreatitis.
2. Acute mesenteric lymphadenitis.
3. Ruptured ovarian follicle.
4. Regional ileitis.
5. Acute salpingitis.
6. Cholelithiasis.
7. Ureteral calculus.

Traumatic Injuries.—The principles involved in the handling of the abdominal war casualty as laid down by Churchill[1] may well be followed in the management of traumatic injuries to the abdomen in peace time. In the treatment of penetrating or perforating wounds there should be no question. Wounds produced by blunt force may likewise produce serious injuries within the abdomen. Hemorrhage, shock and infection are the difficulties encountered. Not more than two or three hours should be spent in resuscitation; if there is no response to adequate blood replacement therapy, the failure is generally due to continuing hemorrhage, extensive soiling and peritonitis or evisceration. It should be remembered that it is better to open a "negative belly" than to have overlooked a ruptured viscus.

The stomach always should be emptied in the preoperative preparation of these patients. The anesthesia is preferably gas-ether-oxygen by the endotracheal technic. The stomach, duodenum and small intestine should be dealt with by primary surgery; with the closure of all wounds or resection anastomosis. Since the colon is never prepared for primary surgery, large intestinal wounds should be exteriorized without tension. If this is not possible, then they should be closed in two layers and a proximal colostomy provided. A complete diversion of the fecal stream can be accomplished only with complete division of the gut, such as Mikulicz type; although frequently a simple loop colostomy may be sufficient. This colostomy always should be brought out through a separate incision. It should be remembered that portions of the duodenum, colon and rectum are extraperitoneal and wounds in these areas should not be overlooked. Drainage of the peritoneum usually is not necessary or desirable in wounds of the gastrointestinal tract unless seen late with abscess formation, but extraperitoneal wounds of the colon and rectum must be drained extraperitoneally. This is particularly true in extraperitoneal rectal wounds in which drainage must be provided by perirectal incisions through the fascia propia into the fatty tissue about the rectum. Removal of the coccyx occasionally is followed by osteomyelitis and is usually not necessary.

Wounds of the pancreas should be repaired with interrupted fine silk or cotton sutures and drainage of the lesser peritoneal space provided. Wounds of the liver usually require nothing but drainage of the peritoneum through a subcostal stab wound placed well laterally. If it has been extensively damaged, however, loose fragments should be removed aand a pack inserted gently. Conservatism should be the keynote in the handling of kidney wounds. Only those with complete loss of blood supply or kidney pelvis should be sacrificed. Ureters should be repaired over nephrostomy tubes or ureteral catheters. Extraperitoneal drainage must be provided. Bladder wounds are repaired

Presented at the 90th Annual Session of the Missouri State Medical Association, March 14-17, 1948, St. Louis.

primarily and suprapubic cystostomy provided. Nonabsorbable sutures can not be used inside the bladder because of the danger of calculus infection. Splenectomy is the treatment of choice in all wounds of the spleen regardless of how minor because of the danger of severe secondary hemorrhage.

Acute Appendicitis.—This is one of the most frequent and serious of surgical diseases. It probably accounts for well over 50 per cent of the acute conditions in the abdomen. Many variations occur in the onset and course of the disease. This is especially true of the quite young, the aged and the obese. Although, as emphasized by Wagensteen and Dennis,[2] appendices frequently are removed unnecessarily, the fact that there are from 18,000 to 20,000 fatalities annually from acute appendicitis indicates that too little importance is placed upon appendicular pain. Subsidence of acute appendicitis can not be predicted with certainty and when it does not subside spontaneously, perforation is usually inevitable. It has been said that the majority of mistakes in appendicitis arise in connection with the diagnosis. I think it can be said safely that there is no difference of opinion as to the treatment of acute appendicitis in the early acute phase. The mortality following operation before perforation is practically nil. This has been emphasized by Keyes,[3] who noted that the mortality before perforation was 0.75 per cent, and after perforation of the appendix it was 9 per cent. This report was published in 1934 and may be too high today with the use of the sulfonamides, penicillin and streptomycin, but the rate still continues to run too high. Whatever mortality occurs in acute appendicitis is due to the complications of this disease which, in nearly every instance, follows a perforation of the appendix. Following perforation, with generalized or localized peritonitis and abscess formation, nearly all surgeons would, of course, combat as many of the symptoms as possible by gastric decompression, chemotherapy and parenteral fluids. Many surgeons would operate promptly after such conservative measures have been carried out. Others would pursue a nonoperative regime as described by Ochsner, hoping that localization or even subsidence of the infection might occur. Inasmuch as the treatment of most infections of the peritoneal cavity is based upon the principle of removing perforated lesions as soon after the perforation as possible, it seems that this same principle might well be followed in the perforated appendix. Justification for this principle lies in the well-known ability of the peritoneal cavity to resist rather severe invasion provided the source of the contamination is removed. Moreover, the danger of spreading the infection by operation has been diminished tremendously since the advent of chemotherapy. However, in the presence of an appendiceal abscess of several days or weeks duration, with a definite mass present, the urgency of operation is not nearly as great and delay for several days may be justified, as shown by George Crile, Jr.[4] In an occasional case in which the appendix cannot be located readily or removed in the depths of an abscess, wisdom is the better part of valor and drainage only should be established. However, the convalescence will be prolonged greatly and an appendectomy called for later.

The most common residual abscess occurs in the cul-de-sac. Treatment of pelvic abscesses is usually conservative inasmuch as practically all of them rupture spontaneously into the rectum with the complete relief of symptoms. If this does not occur and the general condition of the patient is suffering, it may be necessary to drain the abscess by an incision through the anterior wall of the rectum. This usually can be done by a gloved finger or a blunt curved instrument. Subdiaphragmatic abscess sometimes occurs and, when diagnosed, should be opened and drained. Oschner and associates[5] have emphasized the advisability of draining the subphrenic abscess extraserously, i. e., without entering the pleural or peritoneal cavity. If the abscess lies posteriorly, resect the twelfth rib and incise the subphrenic space below the spinous process of the first lumbar vertebra. If the abscess lies anteriorly, it may be reached extraperitoneally by an incision along the costal margin reflecting the peritoneum from the diaphragm up until the abscess is reached.

Just a word about incisions. The McBurney or a transverse incision appears more physiologic and preferable when the diagnosis is definite, if the appendix is perforated or an abscess has formed. The paramedian incision with retraction of the rectus muscle laterally is used if the diagnosis is not definite or further abdominal exploration is desired.

Drainage is of the soft rubber (penrose) type and is used for established infection, but not used for potential infection. These are brought out laterally, either through a separate stab wound or the lateral end of a McBurney or transverse incision. These drains should be removed in from four to seven days.

Acute Cholecystitis.—This may be infectious in origin, but probably is more frequently chemical in origin, with infection being superimposed. Frequently, there is a stone impacted in the neck of the gallbladder, which, with the resultant edema, causes obstruction of the cystic duct. This duct also may be obstructed by edema and adhesions from inflammation alone. Following this obstruction, there is a secretion of mucus, a pulling out of exudate and the production of pus, which increases the distention and the size of the gallbladder. Empyema of the gallbladder is not apt to happen if stones are present. In most instances acute cholecystitis subsides spontaneously, but one can never be quite sure when a stone may be impacted in the cystic duct with development of gangrene and necrotic areas in the gallbladder which ultimately will lead to perforation.

There has been considerable controversy about

the management of these cases for many years. There is no fairly complete agreement that if cholecystectomy can be performed within the first twenty-four or forty-eight hours after the onset, the removal of the organ will be simple and the convalescent period greatly reduced. Operation performed from one to two weeks after the onset is technically more difficult and frought with more danger of damage to the common duct. Sometimes these patients do not come under observation during this early forty-eight hour period. It is then that a conservative regime may be followed for a few hours, watching for evidence of improvement. However, if there is an increase in the pain, muscle guard and fever, along with a rising leukocyte count, operation is indicated on the assumption of a serious complication such as gangrene or perforation. Obviously, signs of peritonitis upon admission call for immediate operation.

The operation of choice is a cholecystectomy, preferably, from below upward. I prefer removal of the liquid contents by trocar suction. The gallbladder is then opened and stones removed, after which the gallbladder is packed loosely with semidry merthiolate pack. The wound then is repacked and gloves changed. At this point two fingers of the left hand are inserted into the foramen of Winslow, the gastrohepatic omentum is incised and the dissection carried down to expose the common and cystic ducts. At this point a dicision is made as to whether the common duct must be explored, the gallbladder removed, from below upward or above downward, or whether cholecystostomy only will be accomplished. Cholecystostomy is used only in those cases of late perforation with abscess formation or if the gallbladder is so badly diseased and densely adherent that removal would jeopardize the patient's life or hazard an injury to the common duct.

A subcostal or a combination transverse and subcostal incision affords the best exposure to the common duct area. Many surgeons still prefer a rectus splitting or a paramedian incision. Drainage is preferred in acute conditions of the gallbladder. This is accomplished by drains of the penrose type, brought out well laterally in a subcostal incision.

Gastric and Duodenum Lesions.—Of the complications of gastric and duodenal lesions only perforation and severe hemorrhage are encountered in the acute abdomen.

Perforation.—It has been said that perforation occurs in 20 per cent of untreated ulcers. A few ulcers may perforate slowly, but the usual onset is one of dramatic suddeness. Frequently, the perforation is the patient's first intimation of disease. Approximately 95 per cent of perforations occur in the male. The mortality increases in direct proportion to the period elapsing between perforation and operation. An operation performed in less than twelve hours carries a low mortality, whereas in one done after twenty-four hours the prognosis is exceedingly grave. This is one of the truly emergency operations that should be done even in the middle of the night. The minimum requirement is simple closure of the perforation, and this is best done by the method of Roscoe Graham.[6] An omental tab is placed over the perforation and held in place by three or four loosely placed sutures. Additional procedures, such as gastrectomy, pyloroplasty, vagotomy or gastroenterostomy, should await elective procedures. All gastric contents should be aspirated carefully. Drainage is neither necessary nor desirable when the operation is done in less than twelve hours.

Hemorrhage.—Although this is the most frequent of the complications of peptic ulcer (25 per cent of all cases) only a few are of the sudden severe type or serious. This condition differs from the usual form of the acute abdomen in that pain is absent. The picture is one of severe shock and hemorrhage. The initial treatment in all bases should be the running of whole blood slowly. Operation for bleeding of peptic ulcer rarely is indicated because conservative therapy is so often followed by cessation of the bleeding. Occasionally this does not occur and an operation may be necessary to control the hemorrhage. Acute massive and repeated hemorrhage usually is due to the presence of a rigid (pipe stem) artery at the base of a calloused ulcer. Operation, then, would seem advisable under such circumstances. The bleeding point must be found and controlled. Arthur Allen[7] has emphasized that if operation is performed it must be done early. Operations carried out more than forty-eight hours after the first of several severe bleedings is associated with a high mortality.

Intestinal Obstruction.—Colle and Elman[8] divide intestinal obstruction into three groups: (1) obstruction to the intestinal lumen from a band, tumor, foreign body, fecal impaction; (2) obstruction to the blood supply (intestinal strangulation), from a band, hernial sac, intussusception, volvulus, (3) paralytic ileus, secondary to peritonitis. The treatment, obviously, will depend upon the type of obstruction involved. The first decision to be reached is whether this is a paralytic ileus or an actual organic obstruction; second, if it is an actual organic obstruction, whether strangulation is present or not. Paralytic ileus is handled conservatively with continuous gastrointestinal siphonage, as advocated by Wangensteen[9] and many others, and in the intravenous replacement of fluid, electrolyte and protein; strangulation demands immediate operation. Conservative measures such as suction drainage and parental fluids should be started as soon as possible, but operation should not be delayed. It is in the third group of simple mechanical obstruction in which most of the mistakes are made. Surgery in this group is not so urgent and conservative management may be tried for a short period of time. Although obstruction from early postoperative adhesions is sometimes relieved, strangulation frequently is superimposed upon a simple mechanical type obstruction. Therefore, one must

not be lulled into a feeling of security once decompression has been accomplished. Surgery usually is indicated and a decision as to the time should be reached within the first twenty-four hours. Obviously, the rectal examination and removal of a fecal impaction is part of the initial examination. It should be remembered that gastrointestinal decompression was not designed to replace surgery and should be considered, along with the intravenous replacement of fluid, electrolytes and proteins, as an essential part of the preoperative preparation of all patients demanding surgery for intestinal obstruction.

There are three general operative procedures available: (1) simple relief of the obstruction, (2) resection, if the loop is definitely gangrenous or there is questionable viability, (3) diversion of the gastrointestinal stream onto the abdominal wall. The procedure of choice in small bowel gangrene or questionable liability is resection and primary anastomosis. However, in the extremely ill patient in whom adequate decompression has not been carried out, exteriorization of the gangrenous loop or resection and interostomy of the Mikulicz type may be advisable. But, patients do not tolerate the ileal loss of fluids, electrolytes and proteins on the abdominal wall for any appreciable period of time. Plastic repair and return of the ileum to the abdomen should be accomplished within two weeks. Nonviable colon probably is best handled by exteriorization or resection and exteriorization of the two ends. A proximal colostomy, cecostomy or, even a terminal ileostomy, is preferable in a carcinomatous obstruction. A planned attack then can be made on the carcinomatous lesion at a later date. Any exteriorization should be brought out a separate wound from the original exploratory incision.

Extrauterine Pregnancy.—These patients seldom are seen by the surgeon prior to the acute episode of perforation, hemorrhage and shock. The treatment, at this stage, is blood transfusion and immediate surgery with the removal of the blood, fetus, placenta and, usually, the tube on the involved side. Occasionally an unruptured tubal pregnancy will be diagnosed. This, too, should be subjected to operation and removal.

Acute Diverticulitis.—Diverticuli of the duodenum seldom causes symptoms. Diverticuli of the small intestine are usually of the Mackel's variety in the terminal ileum. They are said to occur in 2 per cent of individuals, but usually produce no symptoms. They sometimes become inflamed and may perforate. If so, they usually are operated upon with a preoperative diagnosis of acute appendicitis. Treatment in the acute case consists of resection of the diverticulum, with or without a resection of a segment of the small bowel. Diverticuli of the colon are fairly common, but seldom produce symptoms. They are more prone to occur in the sigmoid colon. Occasionally one may become infected and perforate into the peritoneum. When this occurs, simple soft rubber (Penrose) drainage of the abscess is all that is required. A decompressing cecostomy is done because it usually is associated with a partial obstruction. Resection of the colon is seldom necessary unless chronic obstruction persists or it is impossible to exclude carcinoma. At any rate, it should be done as an elective procedure later.

Torsion of Ovary.—This condition usually occurs with an accompanying ovarian cyst and at operation usually necessitates the removal of the ovary and frequently of the tube on the same side.

Mesenteric Thrombosis.—This diagnosis usually is made after opening the abdomen with a preoperative diagnosis of an acute intestinal strangulation. It may be associated with vascular disease elsewhere, but frequently develops in previously healthy individuals. The onset is usually sudden, dramatic and painful. At operation, resection of the involved bowel is usually necessary. When it involves small intestine, primary anastomosis should be done. If the colon is involved, exteriorization or resection and colostomy of the Mickuicz type is performed. The mortality in either instance is high because the thrombosis usually extends to involve the segments of good bowel. The outlook is only a little brighter since the advent of the use of Heparin and Dicoumarin.

Intussusception.—This is primarily a disease of infancy and early childhood. It is said to predominate in healthy breast fed males beneath the age of 1 year. The most common location is near the ileocecal valve. It is rare in adults but does occur, usually with a pedunculated tumor at its apex. The most frequent finding is an incomplete rotation of the right colon with an unusually long mesentery to the cecum and ileocecal region. Its onset is usually sudden, with pain, nausea and vomiting, followed shortly by mucus and blood in the stools or on the examiner's finger. A soft tumor mass may be palpable.

The treatment is obviously surgical and should not be delayed, even for preoperative therapy. The anesthesia is local supplemented with open drop ether. The incision in children is always of the right paramedian variety. Reduction is by taxis from above downward and not by pulling. If reduction is impossible or if gangrene is present, resection is mandatory. This may be done by exteriorization or by resection and exteriorizing the ileocolic limbs.

An ileo-transverse colostomy occasionally may be accomplished, but this is usually technically difficult because of the distended terminal ileum from the resultant obstruction. The mortality is high in resection. The exteriorized limbs must be anastomosed and returned to the abdomen within one or two weeks. A reduction in mortality can be accomplished only by early diagnosis and operation.

Pyloric Stenosis.—This condition is primarily one of early infancy. The usual onset is in the second or third week of life, accompanied by dehydration, loss of weight and constipation. If left untreated, the

condition usually continues until projectile vomiting is present and nothing is retained. Palpation of the tumor mass, as usually described, is not essential for the diagnosis. The history plus the visible peristalic waves across the upper abdomen and a flat plate roentgen ray revealing a large dilated stomach are usually sufficient. In doubtful cases a small barium meal with fluroscopy may be indicated. The treatment is primarily surgical, but the condition is not an emergency. A few days wait will be well spent with correction of the fluid, electrolyte and protein balance. A small blood transfusion may be indicated.

Surgery has been pretty well standardized to the Fredet-Ramstedt operation. This consists of the division of the dense, firm, hypertrophied, circular muscle fibers at the most bloodless point on the pylorus. This is carried down until the submucosa pouts through the separated margins of the tumor mass. Opening the duodenum at the distal end of the tumor is an accident which easily happens. Care should be exercised to avoid it, but if it should occur no damage will result, provided the opening is closed immediately with two or three interrupted sutures.

Volvulus.—This may occur in the small bowel or colon, the sigmoid being the most common type. If the volvulus is in the small intestine, it is more apt to arise from a congenital band or adhesions. If it is in the colon it is more apt to be in those areas with long mesenteries, i. e., sigmoid or cecum and ascending colon in children as a complication of malrotation of the intestine. If the blood supply of the mesentery becomes occluded, signs of intestinal strangulation occur. Unless promptly relieved, operation is imperative. At operation, if strangulation is not present, untwisting of the loop and cutting of a band may be sufficient. Plication of the mesentery has been advocated to prevent recurrence. If strangulation with gangrene is present, excision of the involved loop will be necessary. Primary anastomosis is preferable in the small intestine, exteriorization in the colon.

NONOPERATIVE EMERGENCIES

Acute Pancreatitis.—This may be divided into the acute interstitial (edematous) pancreatitis and acute pancreatic necrosis (hemorrhagic or necrotic). Most evidence seems to indicate that they are states of the same disease process. They frequently are associated with lesions of the biliary tract although the causes of the various types is not clearly understood. The preoperative differential diagnosis is often difficult, but with the more widespread use of early blood amylase determinations this diagnosis may be made more frequently. Acute pancreatic necrosis is really a rare disease for, though often fatal, it comprises but 0.2 per cent of the deaths in a large series of routine autopsies as found by Moench[10] and quoted by Cole and Elman. The acute interstitial (edematous type) usually subsides spontaneously. There is a trend toward treating these patients conservatively if the diagnosis can be made with certainty. In the acute phase, the preoperative, differential diagnosis is often difficult and many of these conditions will continue to be found at operation. Since most cases are associated with disease of the biliary tract, the surgery should be pointed at its correction only. Treatment in the acute hemorrhagic or necrotic types should be confined to simple drainage of the lesser peritoneal space, either through the gastrocolic or the gastrohepatic mesentery. Decompression of the biliary tract should be provided by either cholecystostomy or common duct drainage if these patients are too sick to withstand further surgery.

Acute Mesenteric Lymphadenitis.—This is of surgical interest only because it may stimulate acute appendicitis. At operation, the appendix is found to be normal and only the mesenteric lymph nodes enlarged. The etiology is obscure. Its treatment is conservative and usually consists in removal of the normal appendix.

Ruptured Ovarian Follicles.—These patients are always operated upon under a mistaken diagnosis and do not require surgical intervention.

Regional Ileitis.—This disease was first described by Crohn and his associates in 1932. It is said to occur more frequently in adults. It is a granulomatous lesion of the terminal ileum and may extend into the cecum and ascending colon. A barium meal often gives a characteristic string sign in the region of the terminal ileum. Although the disease is chronic it frequently is confused with acute appendicitis and the diagnosis is made at operation. The treatment consists in resection of the diseased ileum and ileocecal valve followed by an appropriate ileocolic anastomosis. Occasionally, perforation with abscess formation occurs with multiple fistulae tracts. The operation then can be staged, if desired, by doing a short-circuiting ileotransverse colostomy with resection reserved for a later date.

Acute Salpingitis.—This is not a surgical disease and if found at operation the abdomen is closed without surgery and the patient given penicillin.

Cholelithiasis.—Although cholelithiasis is usually considered to be surgical, it does not come under the heading of an emergency unless a stone becomes impacted in the cystic or common duct. If it does not pass in twenty-four or forty-eight hours, surgical intervention is indicated.

Ureteral calculus.—Although ureteral stones may simulate intraperitoneal lesions of the acute abdomen the diagnosis usually can be made by careful history, urinalysis, reference of pain and a flat plate roentgen ray. If the abdomen has been opened mistakenly, it should be closed promptly and the lesion dealt with extraperitoneally.

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OBSTETRIC AND GYNECOLOGIC ASPECTS

KENNETH E. COX, M.D., *Kansas City*

THE ACUTE ABDOMEN may be considered in all cases to be an emergency situation because certain diseases included in this category may progress rapidly to a fatal outcome, often in a matter of hours or even minutes. Surgical intervention often dramatically restores the patient to complete health. As Hertzler once remarked: "This is indeed ideal therapy; to separate the patient from the disease, place the disease in a bottle and the patient back to bed." Such surgery may be termed therapeutic. The principal problem in the therapy of the acute abdomen, therefore, may be said to be the selection of cases for such dramatic action. The physician is committed to rapid and accurate diagnosis of the disease entity that is producing the acute abdomen if his surgery is to be therapeutically directed; rapid because of the progressive worsening of the patient's condition, accurate because therapeutically the surgical procedure is valueless if the diagnosis is incorrect.

Diagnostically, however, the surgery is also of great value. Has not the doctor, unable by other means to rule out a fatal disease, accepted the gamble and ruled out the presence of the killer by performing his laparotomy? Certainly it is better for the physician to operate and diagnose correctly thereby than to let time run out on him and employ his dramatic therapeutic weapon only too late. When and how often to employ surgery in this diagnostic manner from the gynecologic point of view, at least, remains the greatest problem in managing the acute abdomen. Advances, however, are being made daily in the ability of practitioners to diagnose accurately on the basis of history, examination of the patient and laboratory tests, with the consequent reduction in the number of cases upon whom surgery is employed as a diagnostic procedure in the acute abdomen.

I wish to stress particularly the value of history taking in diagnosis. When confronted with an acute abdomen the value of the history, both past history and history of the present illness, will in many cases almost clinch the diagnosis. It becomes immediately apparent to the physician that history is important when he confronts a patient who is suffering from an acute abdomen only to find that the patient is perhaps unconscious, a deaf mute or a moron. If the patient is noncommunicative for any of these reasons, then the diagnosis becomes extremely difficult. I point this out to stress the relationship between the patient and her disease. One must learn to consider the body as the site of the disease and the patient as a witness. In history taking such a witness is subject to the limitations of all witnesses and one may list these: (1) inaccuracy of observation, (2) inability to put observation into words, (3) suggestability, (4) overstatement of facts if under emotional tension, (5) understatement of facts if influenced by a desire to minimize the seriousness of the situation.

In gynecologic diagnosis, in attempting to elicit a history from the patient it is of utmost importance to pay particular attention to the following points in the history.

1. The onset of the present illness, whether sudden or gradual.
2. The relationship of the present illness to menstruation.
3. The relationship of the onset of the present illness to disturbances of bowel and urinary function.
4. History of previous similar attacks and their relationship to menstruation.
5. Recent menstrual irregularities.
6. The possibility always of early pregnancy.

If a careful history always includes these points and, after having been recorded, is evaluated in the light of the known limitations of witnesses in general, one will be able in most instances to rule out functional elements in the patient's complaints and to establish the relationship of the disease to the pelvic organs. If the summation of the points in the history tend to support a given diagnosis, then questions should be asked to further bear out the diagnosis, being careful not to ask direct questions so as to call into play the suggestability of the patient. In the case of suspected ectopic pregnancy, rather than ask the patient directly if she has had pain in either shoulder, a proper question that is not so suggestive would be to ask the patient if she has had pain elsewhere than in her abdomen. Sometimes questions are asked that require a fine finesse on the part of the practitioner. If the evidence in the history as being collected points toward pelvic inflammation on the basis of a suspected abnormal pregnancy, then the physician must question and cross question and plead, if necessary, to get the whole truth so as to be certain that the

Presented at the 90th Annual Session of the Missouri State Medical Association, St. Louis, March 14-17, 1948.

patient is not suffering from acute pelvic inflammation as a result of criminal abortion. One gains and maintains the confidence of the patient by attempting to establish a syndrome with routine questions and then to make the syndrome more specific, by asking more specific questions, questions that will supply the missing blanks to complete a typical history of a certain disease.

I wish to stress that if the practitioner has exhausted all the possibilities of history taking, then usually the syndrome will point in a definite direction which will enable him better to interpret his findings on pelvic examination and will guide him toward which laboratory procedures will best be of aid to him and which procedures may be omitted. Whether or not he is able to establish a specific disease entity, he will in most cases be able to assign on a basis of history the cause of the acute abdomen into one of three major classes, depending upon the etiology. These classes one may list as: (1) infection, (2) hemorrhage, (3) mechanical accidents.

In a paper of this type to which such a short time has been allotted, I will not attempt to enumerate the differential diagnosis in all three of these categories but will suggest only one or two of the more common diseases that fall in each category.

Under infection one must include always acute appendicitis, acute salpingitis and acute parametritis, secondary usually to pregnancy or abortion, and acute enteritis.

Under the heading of hemorrhage one always must include first, ectopic pregnancy and, second, hemorrhage from a ruptured corpus luteum cyst.

Under the third category which fortunately is rather rare with respect to its occurrence, one must include always ovarian cyst with a twisted pedicle mesenteric thrombosis and volvulus or internal hernia.

Practically all of the diseases may be included in these three categories with one notable exception that is in a class by itself, namely, acute pelvic endometriosis.

Pelvic examination usually will establish the presence of acute inflammation in the pelvis proper as characterized by induration, tenderness and fixation of the structures. This finding alone without a correlated history is of little value since the findings may be practically the same, depending upon the severity of the inflammation, in ruptured appendix, ectopic pregnancy, acute salpingitis, acute pelvic endometriosis, or even acute peritonitis resulting from the perforation of a lesion on the anterior wall of the stomach with the consequent spill of gastric content over the watershed of the omentum and into the pelvis where an acute peritonitis is the result. Differential diagnosis, then, on the basis of the pelvic examination, will lie in characteristic features of the history of certain diseases. The presence of a concomitant acute urethritis and acute cervicitis, coupled with smears from the cervix and urethra positive for Neisserian gonococcus, establish the probability that the acute pelvic inflammation is due to gonorrheal salpingitis. In the absence of specific lesions of the cervix and urethra, however, but with a bulging, fluctuant mass in the cul-de-sac and symptoms of blood loss which cannot be accounted for in vaginal bleeding, coupled with the laboratory evidence of low hematrocrit and low hemoglobin, point toward the diagnosis of intra-abdominal hemorrhage. Early symptoms of pregnancy or enlargement of the uterus or palpation of the unilateral mass in the region of the tube favor ectopic pregnancy. Characteristic nodular induration in the posterior cul-de-sac, particularly on the uterosacral ligaments, in the acute pelvis, favor a diagnosis of acute pelvic endometriosis. In each case, however, in the absence of such specific findings that are so suggestive, the practitioner will find that with acute pelvic inflammation, his differential diagnosis will depend chiefly upon his proper evaluation of the history.

Once a provisional diagnosis has been made and before the decision to perform the laparotomy has become necessary, certain adjunctive tests may be employed. I speak principally of cul-de-sac puncture with a needle and culdoscopy. The examination of the patient in knee chest position with the culdescope is rapidly becoming a valuable adjunct in gynecologic diagnosis. Under the aegis of such workers as Decker and TeLinde, the safety of this procedure has been demonstrated and, particularly in cases of the early acute abdomen, may be of value in differential diagnosis of pelvic lesions, particularly acute appendicitis, ectopic pregnancy and salpingitis. To date there have been but few articles in the literature on this subject. I am certain that more and more will be heard from this valuable adjunctive procedure in the future. I would like to mention also in those difficult cases in which there is suspected to be a functional element, one should not forget the novocain test. When a patient has hyperesthesia of the skin of the abdomen, with suggestive muscle guard and in the absence of a suggestive history of intraperitoneal pathologic condition, often the injection of the skin about the area of hyperesthesia will relieve the pain and tenderness entirely, establishing a diagnosis of parietal pain rather than organic pathologic condition as has been demonstrated so aptly by Carnett and others in the past.

Hemorrhage, infection and mechanical accidents are the causes of the acute abdomen. When the physician is called to see the patient he is not witnessing a static phenomenon. When he first sees the patient he should, on the basis of his knowledge of the pathogenesis of the disease suspected, set an arbitrary limit on the length of time under which the patient may remain under observation. During this time he should not be idle—he should observe the patient for changing symptoms and, if necessary, withhold narcotic drugs that may mask the symptoms. He should examine and reexamine the patient to determine changes in the syndrome and

last, but not least, in each case of the acute abdomen the doctor should ask himself two questions. In a patient who is acutely ill in whom an accurate diagnosis has not been made, two complications may exist and be progressing rapidly at any given minute and yet not be suspected. I am speaking now principally of subclinical shock and toxemia. The doctor should evaluate these, particularly shock, so as to institute antishock therapy prior to the institution of surgery. This is perhaps the most common mistake in therapy in an urgent situation. When a patient with an acute abdomen is seen, an immediate hematocrit, hemoglobin and red count often will be the basis on which an accurate diagnosis can be made by a repetition of such tests at a later time. The presence of a low or falling hematocrit in a patient who is otherwise healthy, is prima facie evidence of acute hemorrhage and once the diagnosis is made the patient should be brought out of shock, if possible, before the surgery is performed. This is a method by which operative mortality in the acute abdomen may be reduced.

In conclusion, then, the wise physician in managing the acute abdomen will take an accurate and detailed history and evaluate it on the basis of the human element of error common to all witnesses. He will remain constantly at the patient's side and take advantage of the changing picture of the disease and reexamine the patient and review repeatedly his laboratory evidences. He will never let the urgency of the situation force him to overlook or underestimate the killing power of shock and toxemia to which has been added the trauma of surgery and anaesthesia. And, finally, if the picture is complicated or not readily catalogued into a definite composite picture of a known clinical entity, he will request the best possible consultation at the earliest possible moment.

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SUPPORTIVE PROCEDURES

CHARLES H. JOHNSTON, M.D., *Detroit, Mich.*

I THINK ALL recognize that the speakers this morning have covered a tremendous amount of ground in discussing the acute abdomen. I am sure at least fifty-seven varieties of diseases in one form or another have been covered. It has not been done with a great deal of definition, but rather with discussion of generalities in relation to these diseases.

The same might be said of supportive measures.

The acute abdomen comprises a number of diseases in which varied supportive measures are required. However, again, generalities with relation to supportive measures both before operation, if operation is necessary, and after operation follow the general patterns rather than specific.

These patterns are related primarily to the need of the patient. Ordinary care of patients and concepts of treatment are based on the patient's disease. Actually with relation to cases of the acute abdomen as with other conditions, the supportive measures fall into a generalization of doing for the patient that which the patient needs.

It is quite impossible, I think, to set up for any one disease a routine which, if followed, will give good results in all. There are several general types of supportive treatment which patients are given. In the first place, in the matter of giving drugs to these patients, I think the internist, being much more interested and much more versed in the use of drugs, does a much better job.

As a matter of fact, the majority of surgeons who confine their work to surgery tend more and more to give less and less drugs, and I think this is a good indication so far as surgery is concerned. Once one gets into the matter of giving large amounts of drugs or various drugs, so many of them are given purely empiricly and many of them are not without some harm to the patient.

There is little in the treatment of acute surgical lesions of the abdomen that one can do with any type of drug, supportive or otherwise. The question of fluids and the use of blood all recognize need careful evaluation. There are several points which I think are worthwhile mentioning. In the first place, there is no condition in which the patient routinely needs this kind of fluid or that kind of fluid. The question of the nutritive state of the patient always should be considered and so far as possible be taken care of. Especially is this necessary postoperatively or in cases in which infection and in which spill of abdominal contents are present. These patients lose a great deal of protein and this requires replenishing.

I would like to show one slide. This slide relates primarily to obstruction, but it indicates in a general way how much physicians have been enslaved in various periods with fixed concepts in the treatment of surgical diseases. This is a composite slide

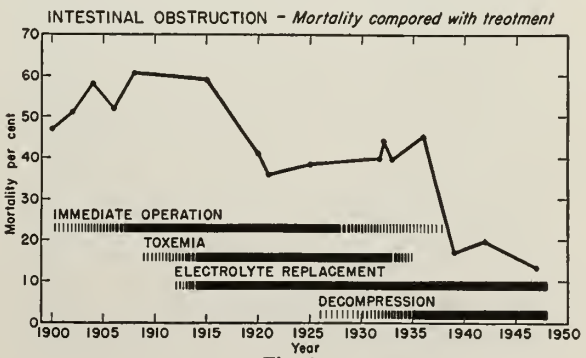


Fig. 1.

which my associate, Dr. Noer, made from the literature in regard to mortality of intestinal obstruction relating to the current theory or idea at the time. I bring this to illustrate how frequently one spots one thing in relation to a disease, and how this one thing is not all the answer. This slide does not include all the things which are the answers either, but is a composite up until the present date. It does not include some of the later work which has been done in supportive measures both preoperatively and postoperatively in surgical diseases. The top line is related to the mortality rate from intestinal obstruction over a period going back to 1900. The mortality was somewhere between 50 and 60 per cent at the period when the one known procedure which was then in vogue was immediate operation. Everyone became exceedingly conscious of toxemia and attempts were made for combating toxemia. It goes much further back than that, but the impetus for a great deal of work in toxemia as related in the literature came about 1910 and even up to 1930. With the concept of toxemia as the paramount problem, the mortality from intestinal obstruction did not go low because the use of antitoxins proved ineffectual or surgeons maintained that in simple intestinal obstruction immediate operation was necessary and little concern was exercised in relation to the patient's ability to stand the operation.

Then came a great deal of interest in electrolyte replacement. In electrolyte replacement, I find myself just as guilty as many others in urging the rather copious use of sodium chloride. It was thought at that time, and I must say with a great deal of good sound physiologic background, that sodium chloride solution was a fluid which could be given to a patient indiscriminately and if the kidneys were working perfectly, all was well. It was considered that if patients were given sodium chloride they could use the chloride and excrete the sodium, or vice versa, and maintain a perfect balance in their electrolytes.

This has been definitely proven not so, and many patients died, not from the intestinal obstruction, but from adding to an already overloaded system the problem of edema resulting from too rigorous administration of salt solutions.

Decompression came along after advances in the better handling of patients, and one might expect rather good results, even though nothing more than the stomach and duodenum were decompressed. It is common for an ill patient, especially one vomiting or one who has acute gastric dilatation associated with the disease, to feel better if his stomach is emptied. He not only feels better but he is a better surgical risk.

For that reason in all the cases in which there is a good deal of vomiting one empties the stomach by suction and keeps it empty. A sick patient unquestionably suffers great harm from periodic or frequent vomiting. Many of these patients who feel quite ill, feel a lot better after their stomach is empty and kept emptied. But decompression did not make all the difference in the mortality. I am sure that in addition to decompression, adequate nutrition, careful administration of fluids including blood, as well as careful surgery, have all played a part.

I always like to think the job as surgeon is to return, so far as possible, the patient to normal. Any patient who can take foods or food by the gastrointestinal route should take it that way. That sounds like a simple statement, but a patient is often intravenously fed all sorts of things, amino acids, various types of vitamines, various types of fluids with various mineral contents which they could eat perfectly well when the gastrointestinal tract will accept and absorb the material.

Postoperatively it has been my custom to allow a patient to eat whatever they want, whenever they want it, because I have more than just a feeling that the adult sane patient can do a better job of keeping themselves in a state of nutrition than if nutriment is ordered.

The question of blood transfusions seems pretty obvious. In a case that has bled and the blood volume is decreased, one does not have to set up a routine for that because one sizes up what the patient needs and, if they need blood, one gives it to them. One should always remember that in many instances in which a patient cannot assimilate food, transfusion affords nutrition. It should not be used as a substitute for eating when the patient can eat.

It is quite common to consider all patients as being more or less equal. That is not necessarily so and especially as regards the nature and amount of supportive treatment required in a serious illness. If a patient has been quite undernourished and needs an operative procedure, it is quite obvious that the patient is going to require a great deal more in the way of nourishment, type of nourishment and manner of administration than a well nourished individual, especially if an emergency operation or an operation of great moment is performed.

Little plasma is used in our own institution. There are few instances in which plasma has any particular advantage over blood. Surely in any patient who has low circulating blood volume, blood is preferable.

During the time one is making up his mind whether the patient falls into the group which must be operated upon or into the group for which operation is contraindicated, the patient must receive attention.

Now, I have made no definite remarks with regard to the care of any particular type of patient. I think too often in the past categories, routines and methods of treatment have been set up, forgetting entirely that the patient is a human being who has certain needs and certain body requirements and who is in certain types of trouble in which a simple procedure would get them out of the trouble. I feel definitely that the need of the

patient and the evaluation of the patient should dictate what is done to that patient in the way of supportive measures.

One other thing I think surgeons have been guilty of in the past and probably are still guilty of. I said that the average surgeon used less and less in the way of drugs. I think by and large that is so, except possibly postoperatively. There is no question in my mind but that a great deal of troubles are made for ourselves, especially with the use of drugs. I am speaking especially of morphine left for indiscriminate administration by staff nurses or otherwise. If a patient has an important problem postoperatively which requires the use of morphine, it surely should be important enough to require the attention of a doctor.

All too frequently the adjustment of bandages or changes of position in bed will negate any requirement for morphine. Morphine is not without a great deal of side effects and in many instances prolongs the discomfort of a patient rather than relieving him. It prolongs the discomfort by possible chest complications, by the possibility of development of nausea and an abnormal feeling on the part of the patient. It is best, of course, for the patient postoperatively to have a feeling of well-being. I do not hold the same general feeling in regard to the little touch of alcohol once in a while postoperatively or preoperatively, especially to the patient who uses alcohol.

DISCUSSION

WILLARD BARTLETT, JR., M.D., St. Louis: The speakers on this symposium have shown their mastery of differential diagnosis of the variety of lesions which may give rise to acute abdominal symptoms and have particularized about each of them. They have made it clear that the term, "the acute abdomen," is not a disease entity and would join me, I believe, in condemning the use of the phrase at all. It is only a waste basket to which one relegates a host of disorders while trying to sort them out and to find one to fit the patient. Medical students and house officers are instructed, rather, to make a specific provisional diagnosis and to disprove it if possible.

Since I cannot generalize profitably on the numerous problems in diagnosis and treatment so ably presented already, I shall particularize briefly on one limited phase of the management of ileus. Dr. Johnston has contributed brilliantly to knowledge of this subject and Dr. Hall was an intern in the hospital in St. Louis in the early 30's during the period in which my own investigative studies in this field were being done. They were, by the way, first reported before this Association in 1931.[1] One now takes for granted the use of nasal catheter suction for decompression of the distended upper gastrointestinal tract in ileus, whether its origin is due only to handling of viscera or to peritonitis or to simple mechanical obstruction. Yet, decompression fails of its full value if records are not kept of the pertinent facts involved in its employment. All of the advances in medical treatment evolve in some measure through the application of methods of precision and this is the case, I believe, in my elaboration[2] of the concept of "pyloric balance." This is the expression in terms of cubic centimeters per twenty-four hours of the rate and direction of flow of gastrointestinal secretion in patients with upper gastrointestinal ileus. It is arrived at, simply enough, by measuring the daily total of injected fluid and the total of fluid recovered by suction during the same period. For example, the patient has drunk 500 cc. and 1,500 cc. is recovered by suction in a given day, then all the injected fluid has been recovered, plus one liter of the patient's own gastrointestinal secretions. The latter sum represents an outright loss of body fluids and is termed a negative balance. On the other hand, if the patient has drunk 1,000 cc. and 250 cc. is recovered by suction, obviously the patient has not only passed all his own gastric secretion through his pylorus in the proper direction, but also has passed 750 cc. of the ingested fluid as well. This constitutes a gain of that much in the hydration of the body and is expressed as a positive pyloric balance of 750 cc. Such information is of great value, not only in the estimation of the daily nutritional needs of the patient, but also as the only way in which the functional capacity of the gastrointestinal tract in ileus may be expressed with mathematical accuracy. Methods of precision are used in determining the level of basal metabolism, of venous pressure and in numerous disorders; should there not be equal exactness in following the status of the bowel in ileus?

In more recent years, it has appeared that the estimation of the pyloric balance also yields information of decided diagnostic and prognostic value.[3] That is, the actual volume of the negative balance at the height of ileus and the length of time during which the balance remains negative, vary characteristically with the causative mechanisms involved. Analysis of my records indicates that: (1) A negative balance of less than 500 cc. is seen in the "adynamic" ileus that so frequently follows handling of the viscera, shock and pyelitis, particularly when the amount of total circulating protein of the plasma is low. This is true in the absence of peritonitis. (2) Larger quantities, up to 1 liter (rarely larger) are seen in ileus due to peritonitis, local or general. (3) In simple mechanical obstruction, the negative balance exceeds 1 liter and may reach 3 liters in relatively complete obstruction.

The appropriate treatment obviously is apt to be instituted far more promptly if the nature of the etiologic agent can be identified so reliably and such errors as needless exploratory laparotomies are more regularly avoided.

In closing I want to express my appreciation of having been invited to discuss this series of presentations initiated by Dr. Johnston. We were classmates about twenty-five years ago and shipmates in the Pacific in 1944. It is a pleasure to have him once more in St. Louis and profitable, as always, to have heard him speak.

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IS THERE MENTAL DISEASE PER SE?

C. C. BURLINGAME, M.D., *Hartford, Connecticut*

Many times in my life I have found it interesting to leave my homeland of psychiatry to follow a daydreaming course through sociology, education, psychology, industry, medicine and the many other fields that have to do with man's well-being. On these sojourns (which are unhampered by present day travel difficulties since they are taken usually in my fireside easy chair), I like to ponder, first, on the relationships between these different fields; secondly, on their respective contributions to man's welfare and, thirdly, on the extent of their various responsibilities.

On the whole, these excursions of mine have smooth going insofar as my musings on relationships, and also on contributions, are concerned. Relationships between the different fields are more or less clearly defined roads, with many bypaths inviting mental exploration of the possibilities for further cooperation between the various disciplines —between medicine and education, for example, or medicine and psychology, and so on. Also, the dazzling contributions made by the various fields are easy to follow and provide much satisfying food for thought.

However, when I contemplate the extent of responsibilities of the various disciplines, which are far less tangible than either relationships or contributions, I encounter no end of difficulty in finding my way to definite answers. It seems to me that the division of responsibilities between any given disciplines is increasingly obscure. For instance, I took a mental excursion into the field of sociology, which embraces political, economic, moral and multiple other interests. I asked myself, "In reaching for the goal of human health and happiness, where does the responsibility of sociology end and that of psychiatry begin?" Only a minimum of mental probing was needed to bring me to the conclusion that there is no definite beginning and end of responsibilities as they are divided between psychiatry and sociology. No matter which course of thinking I pursued, one field inevitably lost itself in the other.

Stymied on that point, my trend of thought swung across the field of education where I searched for a similar dividing line, but with the same lack of success. I could not determine definitely between the extent of responsibilities in education and the extent of responsibilities in psychiatry if, indeed, a dividing line does exist. And it does not.

From education, I backtracked a bit to the sphere of psychology, but in that sister science of psychiatry, the elusive dividing line was obliterated completely.

So, somewhat like a mental nomad wandering over the intellectual globe, I skirted over to the field of industry. Having been the first psychiatrist in industry, as far back as 1915, I felt right at home in the familiar territory of labor problems and employment policies, and it was with considerable relief that I began to feel more self-confident. I relaxed in my mental easy chair. "Now I am getting somewhere," I said to myself. "Psychiatry in industry is something I know, something I can sink my teeth into."

But scarcely had I lighted my psychiatric pipe than I was descended upon by the shades of personnel managers and labor leaders who demanded to know why I had wafted my presence into their bailiwick. "What is your mission in industry?" they asked me. And for the fourth time, I became bewildered and uncomfortable because I was forced to admit that I could not find the way to a clear cut division between the responsibilities of personnel workers and union leaders on the one hand, and psychiatrists on the other. For the fourth time, I had to respond in the same vein, "There is no sharp dividing line between personnel management in industry and psychiatry in industry."

At this point in my mental Cook's tour, I became certain of one thing. No matter how sincere and earnest are psychiatrists in "presenting the psychiatric point of view," they must studiously avoid assuming the role of leadership in sociology, in education, in psychology, in industry or in any other discipline outside their own. Obviously, most, if not all, of those fields are too large, too comprehensive, and too well organized to presume that one is capable of taking on their leadership, or replacing the leaders already there, even if one had the necessary sophistication. It is obvious that, rather, one must approach the other disciplines in the more humble role of contributing his modest specialized knowledge to their specialty. As a matter of fact, at the risk of appearing to be critical, which I am not, I venture that all of the disciplines I have mentioned are in a position to give as much as, if not more than, one has to offer them.

The thought occurred to me that perhaps my perplexity on these matters stemmed from the fact that psychiatry, compared to the other branches of medicine, is lacking in scientific and specific determinants. It is understandable that this should be so. It is certainly nothing to be ashamed of; for one can be proud of the accomplishments when the history of psychiatry is compared to that of the older specialties in medicine.

However, I believe that the truly great scientific contributions are still ahead. Although there is being amassed a growing body of facts about the human mind and the emotions, one must admit (at least in saner moments) that the anatomy and physiology of the human mind are still based at least to an extent on hypotheses. With this in mind,

President and Psychiatrist-in-Chief, The Institute of Living, Hartford, Conn.

Presented at the Annual Spring Meeting, Missouri Society for Neurology and Psychiatry, St. Louis, March 14, 1948.

I resolved to rove mentally over the rest of medicine to see if there was any degree of perplexity as to the extent of responsibility in surgery, in pediatrics, in epidemiology or the other medical specialties, which have built up a decidedly tangible scientific foundation. But I found none. Their fields of responsibilities seemed clearly defined.

My roaming in the medical disciplines, like all of my other roamings, brought me to perplexity as to clear-cut responsibilities of psychiatry. Before long, in my musings, I came face to face with the all important question dealing with my own psychiatry. The question is "Where does somatic medicine end, and psychiatry, or psychologic medicine, begin?" Psychiatry, which deals with the so-called mental diseases, has certainly arrived at an appreciation for its definite relationship with the somatic, while those in the somatic branches of medicine, who regard the human body as their primary, if not their exclusive, responsibility, have begun to leave that tangible homeland of the human body for journeys into the land of psychologic medicine.

For the fifth time I came to the same conclusion. Somatic and psychologic medicine are intermingled with each other to the extent that the boundary lines of yesteryear no longer exist.

I was becoming convinced that the field of psychiatry had no boundaries that were definite, if indeed it had any boundaries at all. It seemed to me that psychiatry was, after all, a most diffuse specialty. But as a branch of medicine, it contains an increasingly scientific center. Around this comparatively solid psychiatric earth is "psychiatric atmosphere" that becomes increasingly rarified the higher the altitude. While atmosphere is not the solid earth, it certainly has its uses and is indispensable.

By this time, feeling almost irresolute, I was engaged in some deep soul searching. Mentally gathering together my compass, maps, charts and other travel aids, in an effort to find solid ground, I returned to my starting point and asked myself: Actually, "What is a psychiatrist?" More than that, "Why is a psychiatrist?" And finally, "What is his field?"

First I searched for the answer to the question "What is a psychiatrist?" Certainly the practical answer could not be found merely in psychiatric aviation, flying around in the psychiatric atmosphere, so I came down to earth and had to be satisfied with the least embellished, but only tangible answer: "A psychiatrist is a specialist in psychologic medicine."

For the second question, "Why is a psychiatrist?" I chose the comparatively unromantic answer that "a psychiatrist is a psychiatrist because there are sick people who need his help."

And in answer to the third question, "What is his field?" I decided that "his field is medicine, in which, as a member of the medical team, he combines his psychiatric and psychologic knowledge with that of all other members of the medical team."

Rightly or wrongly, at last I had some answers. But that comfort was short lived because against the background of my previous musings, the answers stood only momentarily before they opened an entirely new line of questioning to my now travel weary brain. The new direction of my musings went like this: If a psychiatrist is a member of the medical team, a specialist in psychologic medicine who is ready to help patients within his specialty, exactly what diseases fall within his specialty? The obvious answer, of course, would be "mental diseases." But what are mental diseases?

There was a time that all diseases might have been "graphed in a rectangle" that was divided horizontally by an impassable barrier. All diseases above the barrier were mental, and all diseases below the barrier were physical. All know what scientific bombardment has done to that particular barrier, so now a new rectangle and a new graph are needed.

I like to imagine disease as being "graphed in a rectangle" on which, for illustrative purposes, the line is now drawn from the lower left hand corner to the upper right hand corner. Above the line are the psychologic symptoms, and below the line, the somatic symptoms.

In this rectangle of disease, one can observe a segment through the middle that reveals 50 per cent of its symptoms below the line, on the somatic side, and 50 per cent above the line, on the psychologic side. In that particular segment, one finds general paresis, with its symptoms more or less 50 per cent somatic and 50 per cent psychologic. One can agree that this is a disease, but is it a mental disease or a physical disease?

Over to the right in this rectangle of disease, there is a segment showing 90 per cent of the symptoms below the line, on the somatic side, and only 10 per cent above the line, on the psychologic side. Let it be assumed that in this segment one finds the carbuncle. If one does not believe that a carbuncle should have any percentage above the line, on the psychologic side, get one—and one will have proof, through personal experience, that in addition to the physical symptoms, the discomfort and inconvenience of the carbuncle exerts a definite effect on the psyche, which brings about modified personality changes.

Medical men are well agreed that every disease has psychologic components, at least to some degree, so, in the rectangle, every disease must be partly above the line, on the psychologic side. To my way of thinking, every disease must also be partly below the line, on the somatic side.

It is true that there is a large group of diseases in which somatic accompaniments have not yet been identified. Only psychologic symptoms are known. But deductive reasoning will not accept those psychologic symptoms as being 100 per cent of the disease syndrome. One can assume that the symptoms of those diseases might be 70 per cent, or 80 per cent, or 90 per cent, or 95 per cent above the

line, on the psychologic side, but some part of the symptoms, still to be identified, should be below the line, on the somatic side. I have long been convinced that "mental" disease without a physical recording is as nonexistent as a "physical" disease without psychologic accompaniments.

I recall that when I entered the field of psychiatry thirty-nine years ago, general paresis was thought by many to be caused exclusively by psychologic factors. By others it was believed to be a hereditary condition. Of course, now the extent of that ignorance is known, which was revealed when Moore and Nougouchi showed general paresis to be syphilis of the cortex. It was an important day in my life when I had the pleasure of looking at Nougouchi's original slides.

Other so-called "mental" diseases are meeting the same fate, as every day brings new evidence of somatic accompaniments in diseases in which they were not previously known. Every bit of that evidence is further warning of present limited knowledge.

In patients with involutional melancholia, there has been discovered an endocrine imbalance, the correction of which promises to be a most important factor in the recovery. Yet, before this discovery, how many otherwise astute medical men denied the existence of a somatic accompaniment in this disease?

There are those who still deny the somatic accompaniments in schizophrenia. Yet, in schizophrenic patients with pellagra, and in those with malaria, I have seen the schizophrenic symptoms disappear with the cure of the physical disorder. For that matter, at this very moment, in Stockholm, important chemical differences are being observed between the nerve cells in the frontal lobes of well persons, and those of patients suffering from various so-called "mental" diseases, including schizophrenia and manic-depressive psychosis.

It also has been found that some psychiatric conditions are accompanied by the appearance of a sticky substance (blood sludge) on the outside of the circulating red cells, causing them to agglutinate into masses, thus interferring with the nutrition of the nerve cells. Who can deny that new understanding of impaired circulation in the brain will lead to improved understanding and treatment of mental disorders?

Other recent studies of human blood have indicated chemical variations in connection with strong emotions or a craving for alcohol. One variation was observed in persons whose pronounced emotion was tension; another appeared in anxiety states, and still another accompanied resentment. This would seem to indicate that there is a definite body recording of emotions and that there is a definite somatic side to illnesses of psychologic origin.

Scientists also have advanced the theory that the chemical, nitro trichloride, used in the bleaching and aging of grain for white bread, is a "nerve poison" that may be causing mental disturbances in man. It already has been shown to have a deleterious effect on the nervous system of animals.

So it is that one must accept the thesis that "mental disease per se" does not exist—except in one's own ignorance.

During the time of Columbus, and even afterward, it took a great many people a long time to believe that the earth was anything but flat, with edges that dropped off to the depths of hell. Despite the fact that scientific indications were to the contrary, it looked flat to them, and no one at that time could show them that it was round. Therefore, they knew it was flat.

Well, in my time, I have been accused of many things, but never of being gullible, or naive or impractical. I like to be shown, too. I would not presume to claim that I have never had my impractical moments. But my conviction that there is no such thing as mental disease per se is not one of them. I am forced to that conclusion—not by impracticality nor even wishful thinking—but by my obligation to my patients, who, in the final analysis, are the first and foremost responsibility of any medical man.

At this stage in the development of psychiatry, when it is so close to establishing for itself an enduring place as a member of the medical family, nothing is needed more than a singleness of purpose and realistic scientific procedure. Otherwise, there is the risk of losing all. "Getting broader visions in psychiatry" is most challenging and most important, but there is the danger of the efforts becoming so diffuse that the ultimate contribution will be jeopardized. Certainly, psychiatrists must never become so diffuse in their efforts to help in other disciplines that effectiveness is lost, or the primary responsibility of getting sick people well neglected.

If one neglects the job of getting sick people well, no one is going to do it, and one may find himself where, in the words of the prayer book, "We have left undone those things which we ought to have done; and we have done those things which we ought not to have done."

Out of the accepted responsibilities of medicine came physicians who devoted themselves to medical specialties. Psychiatry was born because medical men recognized mental disease as a responsibility of medicine. To separate psychiatry and mental disease from somatic disease and the rest of medicine is to deny its birthright, which will certainly attenuate psychiatric endeavor, and will leave psychiatry eventually in a scientific, political vacuum, isolated, without allies.

The least psychiatrists can do, and still retain a clear vision, is to keep their feet on solid scientific ground, offering patients the best and most one can be sure of in physical medicine and in psychologic medicine in order that they may live successfully as constructive members of society. Good psychiatry cannot be divorced from good physical medicine, and my own personal belief is that psychotherapy, regardless of its form, is an indispensable



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The sooner teaching and thinking of disease as a whole begins, rather than "this is mental disease" and "that is physical disease," the more scientific will be the point of departure and the closer will be the ultimate understanding of so-called mental disease. Regardless of the widespread opportunities for psychiatry in the other disciplines, the greatest opportunity for maximum contribution to medical progress lies in further establishing the relationship between physical and psychologic symptomatology. Indeed, establishing that relationship might well be the farthest reaching medical contribution in this era.

I have tried to emphasize the impossibility of drawing a sharp dividing line between psychiatry and the so-called physical specialties of medicine, as well as the impossibility of continuing to think of mental and physical diseases as separate and distinct entities. I have tried to emphasize that in eagerness to obtain broader viewpoints in psychiatry, one must not forsake the primary responsibilities in the care of psychiatric patients.

The center of responsibility in psychiatry is, and probably always will be, in the great public hospital system. Certainly the handful of hard working men in public institutions cannot accomplish their Herculean task alone. They need the aggressive backing of every person in the entire field of psychiatry and also the aggressive support of every county, and every state medical society and every national medical association.

It often has been pointed out that physicians in the other medical specialties long ago sloughed off all responsibility toward mental patients. In my opinion, their action was prompted largely by the fact that they did not know there is no such thing as "mental disease per se."

The Institute of Living

THE USE OF DIGITALIS IN DIPHTHERITIC HEART DISEASE

DON CARLOS PEETE, M.D., *Kansas City*
AND
JULIUS M. KANTOR, M.D., *Kansas City*

ALTHOUGH LITTLE clinical evidence substantiates the feeling that digitalis is contraindicated, there exists an almost universal belief that its use in diphtheritic heart disease is dangerous.[2,3,4,14] There are two factors that have contributed to the prejudice against the use of digitalis.[5,10,11,14] First, it has been shown by Leete[11] and Wesselhoeft[6] that early circulatory failure in diphtheria is due to an overwhelming toxemia and circulatory collapse. This is best combated with antitoxin and 10 per cent glucose solution given intravenously. Digitalis is of no value at this stage of the illness since the picture is one of circulatory collapse or shock. Diphtheritic myocarditis, which is manifested by a dilated heart and congestive heart failure, may develop after the third or fourth week of illness. At this stage, digitalis may be of great value, as has been demonstrated by Bie and Schwensen[5] in 1922, who reported the recovery of one of two patients with diphtheritic heart disease who was treated with digitalis. Brill[6] in 1944 reported a 5 year old child who made a rapid recovery from cardiac decompensation due to diphtheritic myocarditis. The experience of these observers apparently has not been repeated for the information in the literature is meager on the treatment of diphtheritic heart disease with digitalis. The other factor which has contributed to the belief that digitalis is contraindicated in diphtheritic heart disease is the fact that the electrocardiographic changes in the heart which result from diphtheria toxin are similar to the effects of digitalis intoxication.[1,2,3,4] The experimental work of Edmunds and Cooper[7] showed that the hearts of dogs poisoned by diphtheria toxin were more susceptible to the effects of digitalis than normal dogs. They also showed that digitalis was an effective circulatory stimulant in dogs poisoned with diphtheria toxin. Gold[8] confirmed these studies and stated that, "There is no direct synergism between diphtheria toxin and digitalis even though the heart had been severely injured by the toxin and that diphtheria toxin did not diminish the tolerance of the animal to digitalis unless the animal had been reduced to a state of extreme circulatory depression or collapse." Gold also feels that experimental work does justify that in certain cases of circulatory disturbances produced by diphtheria, digitalis in the proper dosage would be of value. Edmunds et al.[9] pointed out that pharmacologically, diphtheria toxin renders the heart more susceptible to digitalis and if it is to be employed at all in the treatment of diphtheritic cardiac disorders it should be used with extreme caution. Wesselhoeft[2] states that digitalis is contraindicated except in the later weeks of convalescence if signs of decompensation appear.

The reports of auricular fibrillation and auricular flutter occurring in diphtheria are not numerous.[10,11,12] This case is presented because clinically, auricular fibrillation with signs of cardiac failure were present and showed a dramatic response to digitalis therapy although progressive peripheral

From the Cardiovascular Service of the Children's Mercy Hospital, Kansas City, Missouri.

nerve palsies of diphtheria developed. It also emphasizes the danger of treating an acute sore throat with penicillin before a diagnosis is established.

REPORT OF CASE

A 13 year old white male was admitted to the Children's Mercy Hospital on February 12, 1946.

Chief Complaint.—Shortness of breath, weakness and coughing.

Present Illness.—Onset of illness was with an acute sore throat one month previously and manifested by a high fever and aching of his legs and knees. He coughed up bloody, purulent material at that time which apparently came from his throat. He was treated at home with an unknown dosage of penicillin injections and sulfa tablets and subsidence of the acute symptoms followed after several days. The aching and stiffness persisted, associated with marked fatigue and weakness. He was short of breath and coughed up a frothy sputum. There was some numbness of the hands and fingers and a loss of twenty pounds in weight. All symptoms increased until the patient became bedridden.

Past History.—Negative for rheumatic fever or heart disease.

Physical Examination.—Examination revealed a pale, thin, young male with rapid respiration. He appeared chronically ill and showed evidence of a marked weight loss. The head was normal. The ears, eyes and nose showed nothing remarkable. The fundi were normal. The tonsils were small and showed no acute infection. The pharynx was not unusual and the neck was normal except for the presence of small, discrete, anterior and posterior cervical lymph nodes. The chest was clear. Point of maximal impulse was diffuse and present over the fifth interspace in the midclavicular line. The heart was enlarged to percussion, the left cardiac border extending about 3 cm. beyond the midclavicular line and 3 cm. to the right of the right sternal line. The rhythm was irregular. The pulse rate was 152 and totally irregular. A grade III systolic murmur was heard over the mitral area. Blood pressure measured in millimeters of mercury was 110 systolic, 60 to 0 diastolic. Fine, moist rales were heard at the base of both lungs. The liver edge was felt two fingers below the costal margin. The spleen was not palpable. The lower extremities showed evidence of some generalized weakness. The knee and ankle reflexes were obtained with difficulty. There were no pathologic reflexes and no anesthesia was noted to cotton sensation.



Fig. 1.



Fig. 2.

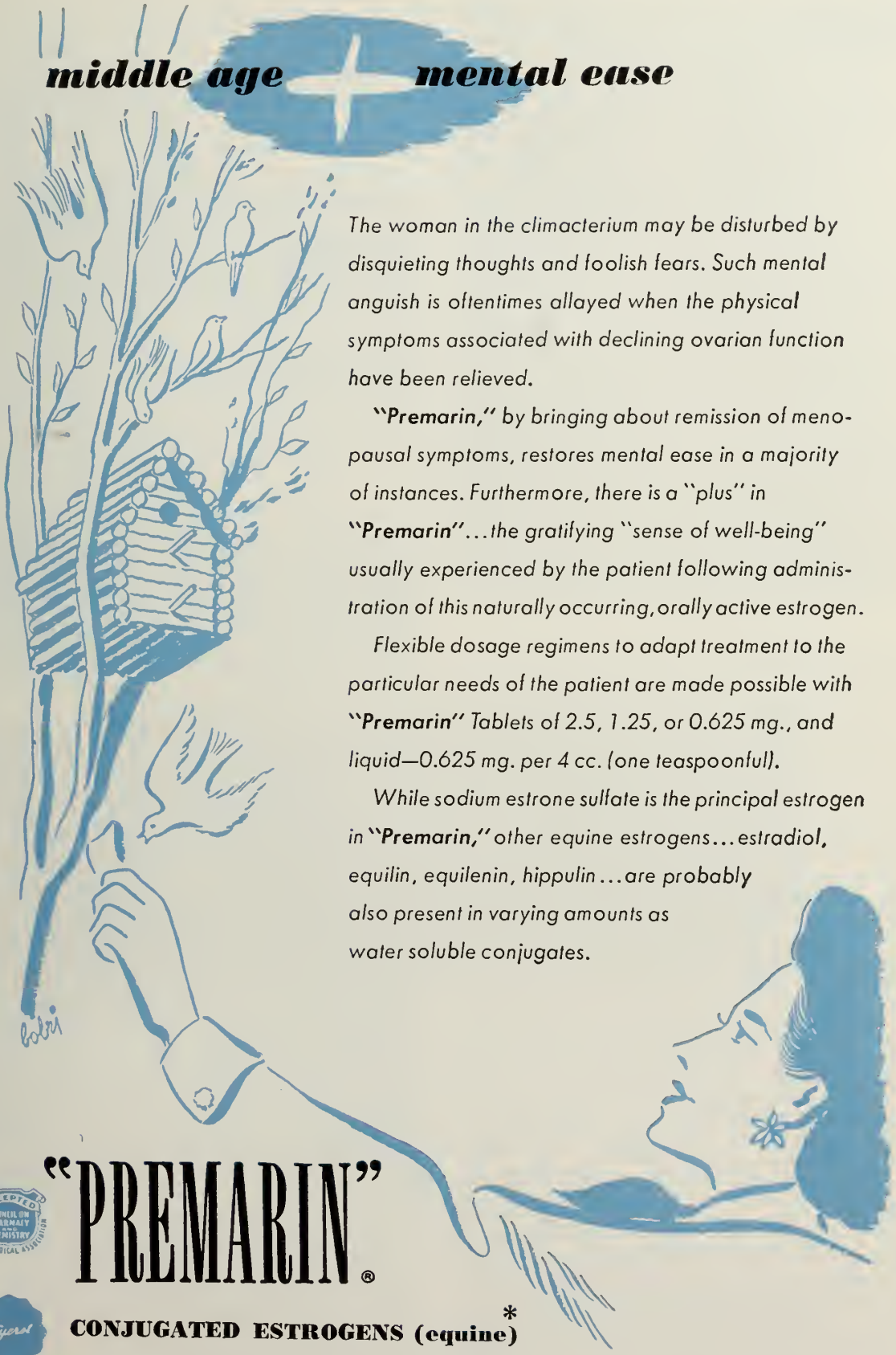
Laboratory Examination.—The urinalysis was negative for sugar and albumin. Examination of the blood showed a hemoglobin of 71 per cent and 9,850 leukocytes. The blood culture was negative on February 18, 22 nd 23. The sputum showed mixed organisms; no Klebs-Loeffler bacillus was seen. The Kahn and Kline showed plus 4 reaction but subsequent rechecks revealed this to be a false positive. The spinal fluid was examined on March 12 and the cell count showed 9 leukocytes and 5 erythrocytes; the Wassermann was negative. The sedimentation rate made on admission was 11 mm. in sixty minutes.

A roentgen ray of the chest showed some degree of passive congestion of the lungs with generalized enlargement of the heart which presented a mitral valvular configuration (figure 1). An admission electrocardiogram was not taken due to technical difficulties.

The clinical diagnosis at that time was thought to be an acute rheumatic myocarditis, auricular fibrillation and beginning congestive heart failure.

He was slowly digitalized with digitalis leaf, resulting in a remarkable slowing of his pulse and a return to a normal rhythm. On the first day, 1.5 grains of digitalis

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Fig. 3.

was given and followed by 3 grains daily for four days, then 1.5 grains daily for three weeks. After six days of digitalis therapy the murmur had disappeared and a reexamination of the chest by roentgen ray showed a remarkable decrease in the size of the cardiac shadow (figure 2).

In an excellent presentation of the electrocardiographic changes and peripheral nerve palsies in toxic diphtheria by Burkhardt, Eggleston and Smith[12] it was pointed out that the earliest change was a slight decline in the S-T line and decreased amplitude of the T wave. The T wave generally fell progressively and finally became inverted. This phenomenon occurred in all three leads but it was most pronounced in lead 2. These electrocardiographic changes occurred from the fifth to the thirty-ninth day.

In our patient, the first electrocardiogram was delayed to the thirteenth day after admission because of technical difficulties. The electrocardiogram on Feb. 25, 1946, showed a right axis deviation, diphasic T-2 and inversion of T-3. The electrocardiogram made April 8, 1946, showed that the electrical axis had returned to normal, P-2 voltage increased, R-T segments 1 and 2 depressed, T-3 of low voltage. On May 6, 1946, the electrocardiographic findings were essentially the same as reported on April 8, 1946.

Approximately ten days after admission it was noted that the boy had a distinct nasal quality to his voice and was regurgitating food into the pharynx upon attempting to swallow. It was found that he had a paralysis of the soft palate. Some wheezing subsequently was noted and the patient began to cough up thick mucoid sputum. Coughing increased and four days later the patient began to complain of a choking sensation and difficulty in breathing. A direct laryngoscopic examination at that time showed an edematous epiglottis and an edematous mucous membrane of the larynx. The vocal cords appeared to have no tone and no movement could be seen. Roentgen rays of the chest revealed evidence of atelectasis with pneumonic involvement of the right lower lobe (figure 3).

At that time it was felt that the original infection was due to diphtheria and that we were dealing with a post diphtheritic myocarditis and peripheral nerve palsies. The knee jerks were found to be absent and due to the involvement of the peripheral nerves there were considerable pain, muscle tenderness and muscle weakness of all extremities. The weakness of the extremities was so marked it was necessary to feed the patient for ten days. Due to fever and evidence of aspiration pneumonia, the patient was given penicillin therapy and 40,000 units of diphtheria antitoxin. There followed rapid clearing of the pneumonia and refilling of the lung; subsequently the heart returned to normal and the nervous system regained its normal function.

Thiamin chloride and nicotinic acid, 25 milligrams of each, were given four times daily for the peripheral nerve palsies. His medication also included cod liver oil and vitamin B complex.

The boy was dismissed in good condition on May 11, 1946, after three months in the hospital.

SUMMARY

A boy 13 years of age was treated with "penicillin injections and sulfa tablets" for a sore throat and developed heart failure four weeks later. Digitalis therapy produced a dramatic return of his heart to compensation in five days. He subsequently developed laryngeal paralysis, atelectasis and pneumonia, resulting from aspiration. Peripheral nerve palsies were also a major complication.



Fig. 4.

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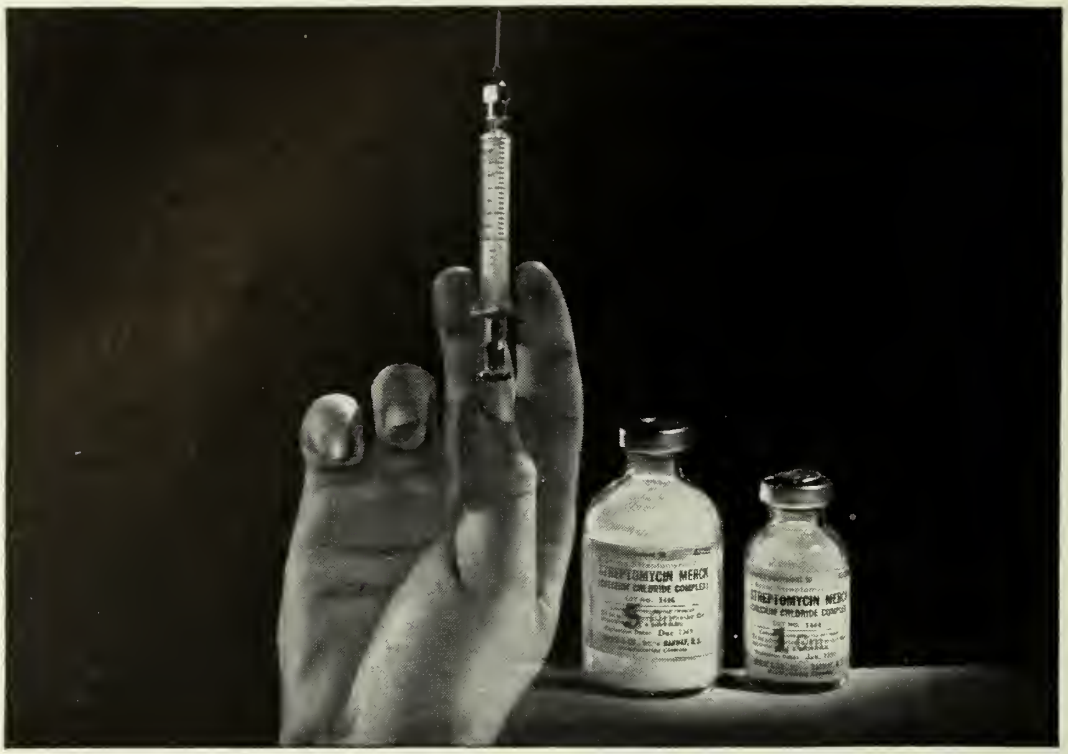
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COMMENTS

We would like to emphasize the following points in the study of this patient:

1. Diphtheria should be considered in a differential diagnosis of acute tonsillitis or pharyngitis; especially is this so when a membrane is present.

2. Throat cultures, when properly done, are invaluable in making a diagnosis.

3. Penicillin and sulfanilamide therapy apparently did relieve the symptoms of the acute sore throat but the toxin was free to produce its effect on the heart muscle and the peripheral nerves. This effect of penicillin and sulfanilamide therapy is in agreement with the findings of Ercoli, Lewis and Moench.[13] Their work was done on the use of penicillin in the experimental infection of mice with Corynebacterium diphtheriae.

4. The increased susceptibility of the hearts of animals to digitalis, when poisoned by diphtheria toxin,[7,8] would indicate that the unfavorable effect of the use of digitalis clinically in diphtheria probably has been the result of overdosage.

5. Contrary to the warnings of the danger of the use of digitalis in heart failure resulting from diphtheria, we found the drug produced a dramatic effect in establishing a normal rhythm with a rapid return to compensation and normal size.

6. We gave only 1.5 grains of digitalis the first day, followed by 3 grains daily for four days, then 1.5 grains daily for three weeks.

7. The use of digitalis in diphtheria in a slowly digitalizing amount should be beneficial in heart failure.

8. Incomplete studies at this time on the use of penicillin and sulfanilamide therapy in diphtheria makes its use inadvisable without diphtheria antitoxin.

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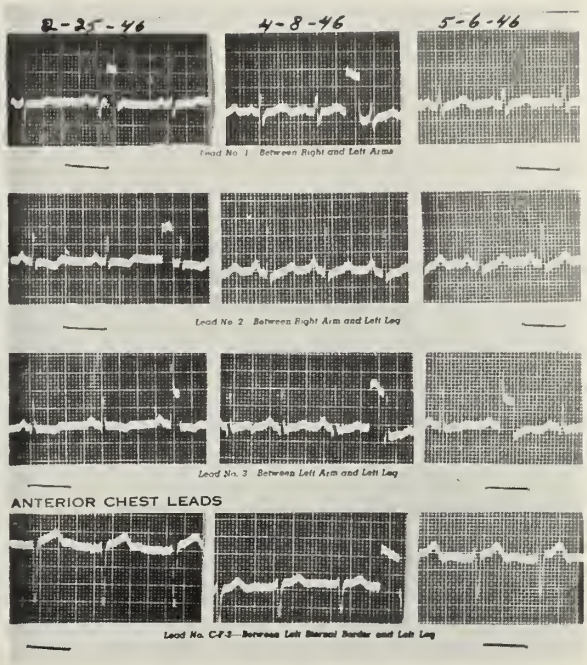


Fig. 5.

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TUMORS MAY CAUSE HIGH BLOOD PRESSURE

High blood pressure in some persons appears to be caused by a certain type of tumor found in the adrenal and coccygeal glands, along the nerves, and in other organs, says George F. Cahill, M.D., of the J. Bentley Squier Urological Clinic and the Department of Urology, College of Physicians and Surgeons, Columbia University, New York.

Writing in the September 18 issue of *The Journal of the American Medical Association*, Dr. Cahill points out that this kind of high blood pressure can be cured by locating the tumor with x-ray and removing it by surgery.

Cases which Dr. Cahill has treated show that this type of high blood pressure seems to result from the release of adrenalin from these tumors. It occurs both in children and in adults and is sometimes difficult to distinguish from hyperthyroidism, hysteria, and psychoneurosis, he says. It may be continuous or may occur only in acute attacks, the article points out.

Symptoms consist of a pounding headache, pronounced beating of the heart, constriction of the hands and feet, and pain just above the stomach, according to Dr. Cahill.

Commenting upon Dr. Cahill's article, Dr. Earl E. Ewert of Boston says in the same issue of *The Journal* that persons who appear to have typical seizures of epilepsy may also be suffering from this type of tumor.

ACUTE HEMATOGENOUS OSTEOMYELITIS

AN END RESULT STUDY OF NONSURGICAL TREATMENT WITH PENICILLIN AND SULFONAMIDES

ROBERT M. O'BRIEN, M.D., *St. Louis*

AND

JOSEPH J. MIRA, M.D., *St. Louis*

The story of the modern treatment of acute hematogenous osteomyelitis begins in 1936.[1] It was demonstrated that, in infants, the mortality and morbidity of this disease could be lowered substantially by avoiding surgical drainage during the early part of the acute stage.

In children more than the age of 2, these authors continued to advocate immediate surgical drainage. However, their reports, and the poor results of early operative intervention, inaugurated a trend that found its climax in the work of Hoyt of Akron Children's Hospital. The latter, in 1941,[2] published results in eight patients treated by sulfathiazole without surgery. Although his series was small, Hoyt's results appeared superior to those obtained by orthodox surgical treatment.

At first unaware of Hoyt's work, and later encouraged by it, one of the authors (Dr. O'Brien) in January 1942 resolved to treat ten consecutive cases of acute osteomyelitis by chemotherapy, withholding surgical drainage. These and later cases form the basis of this report.

It must be remembered that in 1942 refusal to operate in acute osteomyelitis constituted a surgical heresy of shocking magnitude. The authors are indebted to Dr. Leo Wade, then Medical Director of the St. Louis City Hospital, and to Dr. Alexis Hartmann and Dr. Victor Hrdlicka, of the Pediatric Department, for their patient understanding and cooperation during the early days of this study.

PATHOLOGIC BASIS FOR TREATMENT

The pathologic basis for treatment of acute hematogenous osteomyelitis is two-fold. First, the generalized infection must be overcome in order to save life. Second, the local bone lesion must be controlled.

The course of the bacteremia or septicemia depends upon the number and virulence of the bacteria supplied from the source of infection (skin, upper respiratory tract or bone lesion), counterbalanced by the defensive endogenous, antibacterial forces of the host. When the etiologic organism is sensitive to the antibiotic or chemotherapeutic agent employed, amelioration of the disease can be expected.

The bone lesion is an inflammation within a rigid compartment. When this process is advanced, circulation is impaired and bone necrosis results. Specific antibacterial treatment, given in adequate doses while the circulation is still unimpaired, should lead to early recovery. Once pressure and thrombosis have blocked the circulation, the site of infection becomes less accessible to the therapeutic agent and the results will be less favorable.

THERAPEUTIC AGENT EMPLOYED

Five patients in this series were treated with sulfathiazole or sulfadiazine alone because penicillin was not yet available. The results were imperfect, yet appeared better than those obtained by prompt surgical drainage. The only failure in this series (Case 14) fell within this group.

Six cases received penicillin only and the remaining thirteen were treated with both penicillin and chemotherapy.

The use of sulfonamides in combination with penicillin did not seem to have any particular merit. After prolonged use the sulfonamides usually had to be discontinued because of toxic effects.

At the present time, penicillin appears to be the drug of choice.

RESULTS

The clinical data is summarized in tables 1 and 2. The follow-up period ranges from four to fifty-

Table 1. *Material Studied*

Case	*Age Sex*	*Bone*	*Blood Culture*	*Day Rx Started*	*Drug*	*Abscess*
1. M.M.	6 F	Femur	Neg	2nd	Pen	None
2. S.Z.	6 F	Tibia	Pos	2nd	Sulfa Pen	Yes
3. S.C.	10 F	Femur	Neg	11th	Sulfa Pen	None
4. O.S.	8 M	Femur	Pos	13th	Sulfa	None
5. J.K.	10 M	Radius	Neg	3rd	Pen	None
6. S.H.	12 M	Femur	Neg	7th	Pen Pen	None
7. W.F.	10 M	Femur	Neg	3rd	Sulfa Pen	Yes
8. S.I.	9 F	Tibia	Pos	3rd	Sulfa Pen	Yes
9. E.S.	17 M	Ilium	Pos	6th	Sulfa Pen	None
10. B.S.	12 F	Tibia	Neg	3rd	Sulfa Pen	None
11. A.M.	13 F	Tibia	Neg	4th	Sulfa	Yes
12. L.L.	8 M (Wks.)	Tibia Femur	Pos	4th	Sulfa	Yes
13. V.K.	3 M	Humerus	Pos	3rd	Sulfa	Yes
14. J.K.	14 M	Tibia	Pos	5th	Sulfa	Yes
15. C.A.	26 M	Tibia	Not done	7th	Pen Pen	None
16. K.B.	7 M	Tibia	Pos	1st	Sulfa	None
17. A.B.	13 F	Tibia	Not done	3rd	Pen Pen	None
18. B.S.	5 M	Femur	Pos	1st	Sulfa Pen	None
19. A.J.	4 M (Wks.)	Femur Femur	Pos	1st	Sulfa Pen	None
20. J.H.	2 F	Humerus	Pos	3rd	Sulfa Pen	Yes
21. O.M.	7 M	Tibia	Pos	2nd	Sulfa Pen	Yes
22. C.T.	6 M	Tibia	Pos	4th	Sulfa	Yes
23. E.J.	10 M	Tibia Humerus	Neg	3rd	Sulfa	Yes
24. R.M.	11 M	Ulna Radius	Neg	3rd	Pen	Yes

From the Department of Orthopedic Surgery of the St. Louis University School of Medicine and the Orthopedic Service, St. Louis City Hospital.

Presented before the St. Louis Surgical Society, April 21, 1948.

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Table 2. *Clinical Results*

Case	Sinus	Compli-cations	Bone Met-astasis	Recur-rence	Follow up (mos)	Results
1.	None	None	None	None	22	Norm. Function No Deformity
2.	Yes	None	None	Yes	48	Norm. Function 3 x 1 cm. scar
3.	None	None	None	None	13	Norm. Function No deformity
4.	None	None	None	None	14	Norm. Function Sl. Coxa Vara
5.	None	None	None	None	12	Norm. Function No deformity
6.	None	None	None	None	14	Norm. Function No deformity
7.	None	Yes	None	None	4	Norm. Function No deformity
8.	None	None	None	None	24	Norm. Function No deformity
9.	None	None	None	None	32	Norm. Function No deformity
10.	None	None	None	None	21	Norm. Function No deformity
11.	None	None	None	None	20	Norm. Function No deformity
12.	Yes	None	None	None	57	Norm. Function 4 by 1 cm. scar
13.	None	Yes	None	None	39	Norm. Function No deformity Occ. pain
14.	Yes	None	None	None	59	Limited Motion Ext. scar
15.	None	None	None	None	12	Norm. Function No deformity
16.	None	None	None	None	12	Norm. Function No deformity
17.	None	None	None	None	12	Norm. Function No deformity
18.	Expired					
19.	None	None	None	None	26	Norm. Function No deformity
20.	None	Yes	None	None	10	Norm. Function No deformity
21.	None	None	None	None	13	Norm. Function No deformity
22.	None	None	None	None	39	Norm. Function No deformity
23.	None	None	None	None	44	Norm. Function No deformity
24.	None	None	None	Yes	26	Norm. Function No deformity Occ. Sl. Pain

nine months, the average twenty-five months.

Mortality.—There was one fatality, a mortality rate of 4 per cent. Case 18, a 5 year old boy, was admitted to the hospital eighteen hours after onset of illness. He was comatose and moribund. Blood and spinal fluid cultures showed a heavy growth of hemolytic staphylococcus aureus. Despite energetic supportive measures and intensive intravenous therapy with penicillin and sulfadiazine, death ensued fifteen hours later.

General Signs and Symptoms.—In most cases treated within the first forty-eight to seventy-two hours, the temperature fell to normal within as many hours. In the more severe cases and when treatment was delayed, the abatement of fever was more gradual. Occasionally, slight fever persisted or was intermittent for several weeks. All patients treated with penicillin showed marked rapid improvement in general well being, except the one fatal case. This effect was less pronounced in the early cases treated solely with sulfonamides.

Local Signs and Symptoms.—In general, the response of the local infection was less rapid. In the less severe cases, local pain, tenderness and swelling subsided rapidly. In others, local signs and symptoms persisted or were intermittent for a variable period.

Complications.—Complications developed in three cases. In case 7, the lesion spread from the distal end of the femur into the knee joint. Suppurative arthritis occurred and progressed. On the eleventh hospital day, incision and drainage of the knee joint was done. The joint was irrigated through parapatellar incisions. Penicillin, 100,000 Oxford units, was instilled and the synovia and capsule sutured. The incisions healed and all signs of infection subsided within three weeks.

Case 13, a 3 weeks old infant, developed an abscess of the scrotum on the third day of illness. Incision and drainage was followed by prompt healing.

Case 20, also an infant, developed bilateral otitis media. Myringotomy was done, with recovery.

Metastasis.—Bone metastasis did not occur in this series, although the two infants had simultaneous involvement of two bones. Prior to penicillin and sulfonamide therapy, bone metastasis occurred in from 20 per cent to 30 per cent of cases.

Failure.—Case 14, a 14 year old boy, must be considered a failure of treatment. This patient, critically ill on admission four days after onset of symptoms, showed satisfactory general response to sulfadiazine therapy, but his tibial bone lesion progressed to involve the entire shaft of the bone, and sequestration ensued.

Eleven months after onset, a draining sinus persisted and a conventional sequestrectomy was done. When last examined, fifty-nine months after onset, the patient showed extensive scarring of the anterior surface of the tibia, moderate limitation of ankle motion and subjective local discomfort on strenuous activity and with weather changes. Had penicillin been available at the time of treatment of this boy, a better result undoubtedly would have been obtained.

Abscesses and Sinuses and Recurrences.—Soft tissue abscesses were aspirated in eleven cases, and healing followed within two or three weeks, with three exceptions.

Case 14 has been described. Case 2 developed a fluctuant mass over the involved tibia at fifteen months and spontaneously extruded a 1 by 2 centimeter sequestrum. The sinus healed within one month and had not recurred when the patient was seen in follow-up examination thirty-three months later.

Eighteen months after onset, Case 12 developed a draining sinus. There was no evidence of sequestration or toxicity. With conservative management, this sinus also healed within one month and had not recurred when this patient was last seen, thirty-nine months later.

Function.—The functional result in all cases was normal except Case 14, classed a failure. In that patient, moderate limitation of ankle motion resulted.

No gross deformities occurred in this series. Mild to moderate soft tissue and bone thickening de-

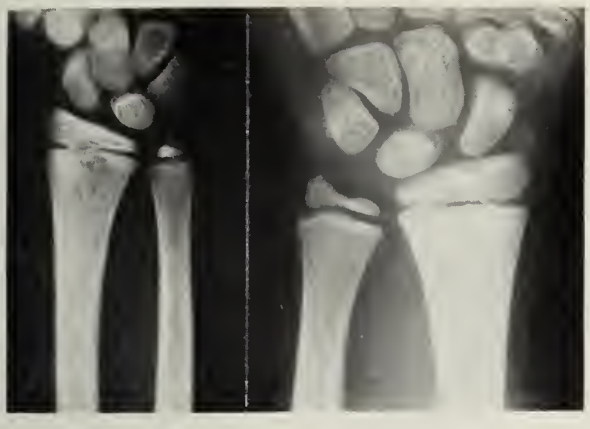


Fig. 1. A. Case 5, J.K., thirteen days after onset. Patient clinically well. Radiographs show area of bone destruction in metaphysis. B Same patient one month after onset. Bone lesion is healed. Patient is free of symptoms.

veloped in eight cases, cases 2, 4, 8, 11, 12, 14, 22 and 23.

Radiographic Changes.—Roentgenographic manifestations of the bone infection appeared sometime between ten days and three weeks after onset of symptoms. Occasionally, when treatment was begun early, the patient was cured clinically before there was radiographic evidence of osteomyelitis (Fig. 1A and B).

The earliest detectable change in radiographs was usually one or several areas of rarefaction in the metaphysis. Rarefaction without other change occurred in seven cases. In such patients, normal bone architecture was reconstituted in a short period, usually from two to four months.

Periosteal reaction of varying intensity was a later manifestation and was noted in fourteen cases. It occurred in the more severe cases and when treatment was delayed.

Sequestra, usually quite small, developed in six cases. One (Case 14) was removed by sequestrectomy, one (Case 2) was extruded spontaneously, and four (Cases 4, 6, 8 and 23) were resorbed spontaneously.



Fig. 2. A. Case 6, S.H., ten weeks after onset. Radiographs show bone destruction in upper femoral shaft, with small sequestrum. B. Same patient ten months after onset. Healing has occurred with some sclerosis. The sequestrum apparently has been absorbed.

In eleven patients, the final radiographic appearance was that of normal bone. Four cases showed slight sclerosis. Seven had moderate sclerosis with some cortical thickening. Case 14 showed extensive sclerosis and cortical thickening.

COMMENTS

For best results, treatment must begin early, and penicillin should be given in doses consistent with the fact that this disease may kill and frequently will maim the individual affected.

In the cases reported, treatment was started quite early, on the average the fourth day, and none later than the thirteenth day. This, it is believed, accounts for the good results obtained in this series.



Fig. 3. A. Case 3, S.C., thirteen days after onset. Note circular area of bone destruction in the femoral metaphysis. B. Same patient five months after onset. Perfect healing has occurred.

If a fluctuating, soft tissue abscess develops, the surgeon must resist his natural instinct to drain it. To do so invites secondary infection. Aspiration through adjacent normal skin will prevent rupture in most cases. Repeated aspirations may be necessary.

Four of six sequestra which formed were resorbed spontaneously. Such a favorable outcome is not unknown.[4] The histologic condition for osteoclastic resorption of necrotic bone is contact with living connective tissue. By arresting the infection in living bone tissue, specific drug therapy can exert a decidedly favorable influence. On the other hand, in the presence of a persistent draining sinus, a large sequestrum probably has lost its connection with living connective tissue and requires surgical removal.

It is realized that an occasional patient will be seen in whom antibiotic treatment has been delayed or inadequate. In such a case, advanced soft tissue and bone necrosis might demand surgical evacuation and débridement of the wound. When this is

necessary, primary closure of the overlying skin should be done if possible.

Every attempt must be made to keep the bone lesion covered with skin. The so-called "open" treatment of osteomyelitic wounds almost invariably is followed by secondary infection, delayed healing and a tendency to recurrence.

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ONYCHOLYSIS

PRELIMINARY REPORT OF CASES FOLLOWING THE USE OF FINGERNAIL BASE COAT

THOMAS F. B. DARNELL, M.D., *Kansas City, Missouri*

AND

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Following are case reports on onycholysis. One case was seen in the office of Thomas F. B. Darnell, M.D., and two in the office of C. C. Dennie, M.D. For some period of time each patient had used a nail base coat preparation which was applied to the fingernails before application of nail polish.

REPORT OF CASES

Case 1. Mrs. F. E., white female, aged 60, housewife, reported onset was in January 1948 when the patient and manicurist noticed the fingernails getting hard. About February 1, 1948, the patient noticed the fingernails turning up and separating from the nail bed. This condition gradually became worse with the nails being separated far back proximally and being white in the turned up area. Also, there was a piling up of hard material under each turned up nail. The condition continued to get worse and the patient went to a doctor. All fingernails then were involved. Toe nails were not affected.

About September 1, 1947, the patient had started to use a preparation as a base coat. This was applied directly on the nails about two times a month before application of nail polish. Beginning about October 1, 1947, a similar preparation was used in place of the former though applied in the same manner. The nail polish, applied over this, was one the patient had used for one year with no ill effects.



Fig. 1.

On February 24, 1948, the patient was seen at a physician's office. Physical examination was normal except for the fingernails. All fingernails showed separation of the nail from the bed, almost to the lunula, proximally. All nails were uplifted to a degree that caused dorsal curving. The portion of the nail separated showed a white discoloration, was hard and somewhat brittle. Beneath the distal part of each nail was noted a piling up of hard but brittle debris. The margin of the proximal area, where separation ceased, showed a reddish brown discoloration beneath the nail which was suggestive of hemorrhage and old pigment from hemorrhage.

Laboratory results were as follows: prothrombin time, 12 seconds; platelet count, 130,000; basal metabolic rate, plus 3; red blood cells, 3,920,000; white blood cells, 8,150; Hb. 84.5 per cent; differential count: neutrophils 52, lymphocytes 46, monocytes 2; clotting time, 4½ minutes, bleeding time 1½ minutes.

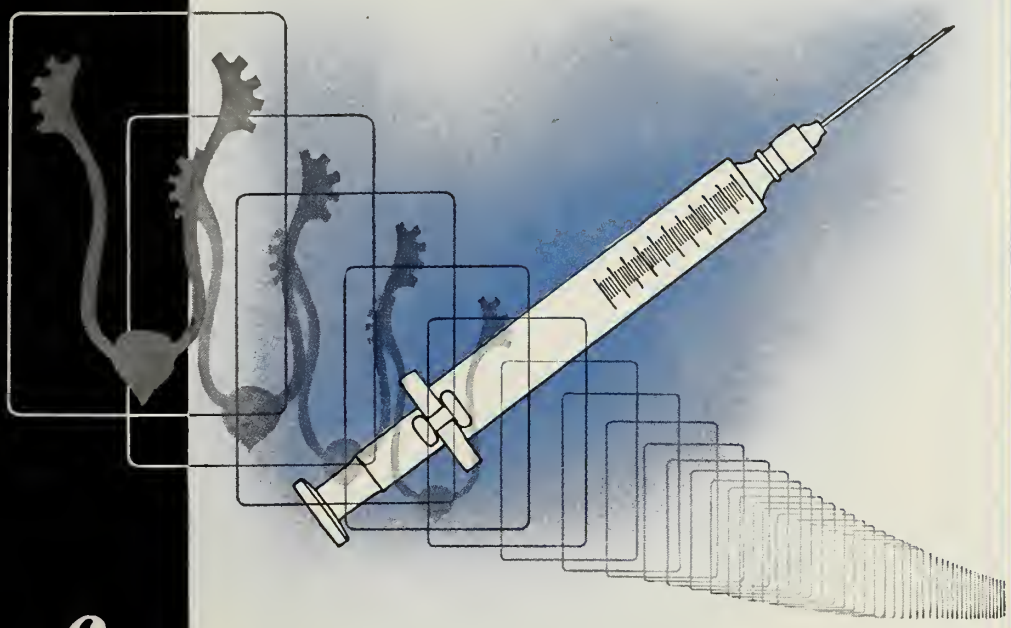
On the first visit to the physician's office, the patient was advised to discontinue all nail preparations and to remove that which was on the nails.

The patient was seen intermittently and by the end of one month the only separation noted or remaining was under the distal portion of the nails. Normal color had returned to other portions of the nails. The area suggestive of hemorrhage had disappeared. The condition was so improved that photography which had been planned was not done as it was thought the resulting pictures could not show sufficient pathologic condition remaining.

Case 2. Mrs. S. D., 53 years old, female, sewing machine operator, noticed about seven to ten days before her visit to the physician's office on January 6, 1948, that her fingers were sore and the nails were detached from the underlying tissue. All but the right index fingernail were involved. The detachment extended back from the free edge from one third to one half the distance to the lunula. The nail was tender on pressure. Detachment was more central than lateral and the distal part of the fingernail appeared to be deflected upwardly.

The subungal space was filled with dry yellowish debris which crumbled easily on scraping. No irritation of the cuticle or other skin of the finger was present.

For many years the patient had been sewing overalls on a machine but no unusual tension of the finger tips



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was involved in the procedure and no new materials had been introduced.

For the last three to four months the patient had been using a nail base coat, one of the preparations that the former patient had used.

Her general condition was fairly good. A chronic antra infection and vitamin deficiency were reported by the internist. The tongue was normal. Heart and lungs were normal and there was no adenopathy. The liver and spleen were not palpable. The blood Wassermann and Kahn were negative. Gastric analysis revealed an achlorhydria. No evidence of pernicious anemia or gastric malignancy was found. Culture of nail on Saubouraud's media showed no mycotic growth.

The patient was given dilute HCl by mouth and vitamin therapy. No nail preparation has been used since her first visit to the office.

Although the nails are not normal, slow progressive improvement has been noted.

Case 3. Mrs. M. S., 45 years old, married housewife, visited the office on April 13, 1948, complaining of sensitive nails with distal separation from the nail bed of all but the two index fingernails. Onset had been four months previously. The detachments extended back from the free edge from one fourth to one third the distance to the lunula.

The patient developed undulant fever twenty-seven years previously and has had several exacerbations since but no nail changes have been present. Her general health has been good. There was no unusual trauma to the fingers and no history of psoriasis.

For the last eight or nine months the patient had been using the base coat which the other patients had used.

A culture of the nail on Saubouraud's media was negative for fungi.

Treatment has been only to stop use of this base coat.

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MEDIASTINAL EMPHYSEMA AND BILATERAL PNEUMOTHORAX COMPLICATING OPERATIONS ON THE NECK

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AND

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Operations on the neck may be complicated by many disasters. One of the less common, but of major importance because of its frequent fatal termination, is the entrance of air into the mediastinum with rupture of the mediastinal pleura, resulting in bilateral pneumothorax. This complication has been observed on three occasions. The first two terminated in death. The third case recovered. It is the purpose of this paper to reemphasize the importance of early diagnosis, the pathogenesis and management of this complication.

The first case has been previously reported by Ackerman and Bricker.[1] This patient, a 58 year old male, underwent a radical neck dissection for metastatic carcinoma of the cervical nodes secondary to an epidermoid carcinoma of the lip. At operation some difficulty in maintaining a free airway was encountered but the patient's condition was good until near the end of the procedure. At that time he became cyanotic and his respirations became labored. In spite of oxygen administered by tracheal catheter and artificial respiration, the patient's condition grew worse and he expired a few minutes after the operation was completed.

A postmortem roentgenogram of the chest showed a bilateral pneumothorax and mediastinal emphysema. Autopsy verified this and, in addition, showed obliteration of the apical pleural spaces by old adhesions. This later finding eliminated the possibility of the pneumothorax resulting from injury to the parietal apical pleura.

The second case is that of a 66 year old male who had a melanoma on the helix of the left ear. This lesion was excised and a few days later a radical neck dissection was performed. At the close of the procedure a tracheotomy was performed at which time the patient struggled for air, apparently due to partial obstruction of the upper airway. Shortly after operation his breathing became labored and his temperature rose to 105 F. A chest film showed bilateral partial pneumothorax and mediastinal emphysema. Needles were placed in both pleural spaces and continuous suction applied with considerable subjective and objective improvement. However, on the fourth postoperative day the needles became plugged and before this was recognized the patient expired.

The third case is that of a 64 year old white male who received roentgentherapy, 5,000 r., for an extensive epidermoid carcinoma of the right lower lip and right buccal mucosa in July and August, 1944.

In June, 1946, there was no sign of recurrence, but there was evidence of radiation necrosis involving the right side of the mandible. This was treated conservatively until August 12, 1946. At that time, following trauma to the jaw, there developed marked trismus and three draining sinuses along the right lower border of the sequestrating mandible. Resection of the right half of the mandible was recommended.

This procedure was carried out on August 16, 1946, under endotracheal anesthesia with the endotracheal catheter placed in a low tracheotomy because of the trismus. The right half of the mandible was resected without complication. At the end of the operation considerable difficulty in introducing

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a tracheotomy tube was encountered after removal of the endotracheal tube. The patient attempted to take several deep breaths and became cyanotic before the airway was reestablished. It was noted immediately that subcutaneous emphysema had occurred, involving the upper anterior chest, neck and left side of the face. An emergency chest film showed mediastinal emphysema and partial bilateral pneumothorax.

Large bore (15 gauge) needles were placed in the anterior upper pleural spaces and moderate continuous suction applied. The space about the tracheotomy tube was packed tightly with gauze to prevent more air entering the mediastinum. Negative intrapleural pressure was present within twenty-four hours. A chest film forty-eight hours after operation showed both lungs expanded. On the fourth postoperative day the tracheotomy tube was corked without respiratory distress and intrapleural suction was discontinued. The tracheotomy stoma closed rapidly and the patient was discharged on September 4, 1946, the nineteenth postoperative day. He was last seen on November 22, 1946, at which time he had no complaints. He was working daily.

DISCUSSION

Mediastinal emphysema with bilateral partial pneumothorax has been noted following thyroidectomy, radical neck dissections, tracheotomy and other operations on the neck by numerous observers.[1,2,3,4,5,6,7] This complication has been noted frequently by otolaryngolists following tracheotomy principally in children and infants. In 126 consecutive tracheotomies Neffson[5] has noted this condition in seventeen (13.5 per cent) children between 6 months and 4 years of age. In eight of these cases the pneumothorax was unilateral, and nine, bilateral. Of the eight unilateral pneumothoraces, two patients died, a mortality of 25 per cent. Of the nine bilateral pneumothoraces, eight ended fatally, a mortality of 89 per cent.

The pathogenesis of this condition has been studied by numerous investigators.[1,2,3,4,5] Apparently Champneys,[8] in 1884, was the first to call attention to this complication following tracheotomy.

The following incidents capable of producing mediastinal emphysema and bilateral pneumothorax have been suggested.

1. Direct trauma or injury to the parietal apical pleura. This condition most certainly did not occur in the first case presented here as emphasized by Ackerman and Bricker[1] in their previous report, as the apical pleural spaces were obliterated by old adhesions. It is also difficult to explain why bilateral pneumothorax and mediastinal emphysema would occur, following injury to the apical pleura.

2. Rupture of air from alveolar spaces or eroded bronchi into the interstitial tissues and migration of this air along the bronchi and sheaths of the pulmonary vessels to the mediastinum, with rupture of the pleura, resulting in pneumothorax has been noted. Torrey and Grosh[9] have noted this following infections. This mechanism has been demonstrated experimentally by Macklin.[10]

3. The pathogenesis which seems best to explain the events in these cases is that strong inspiratory movements in the presence of an upper airway obstruction and a wound in the neck sucks air into the mediastinum with eventual rupture of the mediastinal pleura into both pleural spaces. The fact that we have observed subcutaneous emphysema in the tissues of the lower neck following emergency tracheotomy would seem to support this mechanism. Also, as pointed out by Ackerman and Bricker[1] in the first case, no interstitial air was present in the lungs. It is rather surprising that with the powerful suction exerted by the thorax, that this complication does not occur more frequently during operations on the neck.

TREATMENT

Prophylactic.—It is essential at all times to maintain an adequate airway during operations on the neck. This may be accomplished by the use of local or nerve block anesthesia, when practical, as there is little danger of obstruction as long as the normal pharyngeal and laryngeal reflexes are present. The use of a pharyngeal airway is of value as it prevents the tongue from falling back and obstructing the pharynx. The most adequate airway is obtained by the use of endotracheal anesthesia and would eliminate this complication. Johnson[7] has suggested the use of a bronchoscope introduced preoperatively in those cases that are struggling who have to have a tracheotomy, thus converting the air hungry patient to a quiet one and decreasing the intrathoracic pressure. This of course would be impractical in the presence of many obstructive lesions.

Definitive Treatment.—The early recognition of bilateral pneumothorax and mediastinal emphysema is the most important single factor in treatment. Once it is recognized, the aspiration of air from both pleural spaces by continuous suction will expand the lungs and permit adequate respiratory exchange. The wound in the neck should be sealed by packing with gauze to prevent more air from entering the mediastinum. The maintenance of a free airway is, of course, of paramount importance. We feel that artificial respiration is contraindicated as it merely increases the intrapleural pressure resulting in more air entering the pleural spaces. Bag breathing with oxygen would seem to be of value if the upper airway is open.

CONCLUSION

Mediastinal emphysema and bilateral pneumothorax, complicating operations on the neck, have been discussed. Because of the high mortality resulting from this complication, early recognition and appropriate treatment are essential. A case recovering from this condition is reported and the pathogenesis and management is presented.

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BOOK REVIEWS

Cancer, Diagnosis, Treatment and Prognosis by Lauren V. Ackerman, M.D., Pathologist to the Ellis Fischel State Cancer Hospital; Assistant Professor of Pathology, Washington University School of Medicine, St. Louis, and Juan A. del Regato, M.D., Radiotherapist to the Ellis Fischel State Cancer Hospital; Formerly Assistant to the Radium Institute of the University of Paris. With 745 text illustrations and 42 color reproductions. C. V. Mosby Company, St. Louis. 1947. Price $20.00.

The book, "Cancer," by L. V. Ackerman and J. A. del Regato, fulfills the avowed purpose stated in the preface —"To provide a text which will facilitate the acquisition of general information and serve as a guide toward richer sources of knowledge of cancer." As such it will be of greater usefulness to the medical student and general practitioner than to the physician who devotes much or all of his practice to neoplastic diseases. As would be expected from the fact that the authors are pathologist and radiotherapist, the text dealing with these areas is most voluminous and best projected. This is sometimes done at the expense of deemphasizing the clinical features.

Extensive use of illustrations and photographs, some in color, enhance the presentation of the subject matter, particularly the pathologic aspects. The placing of much emphasis on radiotherapy of cancer might by some reviewers be considered a refreshing point of view, since so many other texts have stressed the surgical approach. However, it is questionable if a book of this type should emphasize any particular point of view; it would be better to place equal emphasis on all the aspects of this broad subject. To illustrate this point, the surgical therapy of cancer of the mammary gland is sketched in three pages and includes no details of technic, while the radiotherapy of cancer of the uterus requires eleven pages, and covers details of technic out of the scope of the authors' projected plans. With this exception the book can be well recommended as an all around text devoted to cancer, and particularly for the fine sections on pathology and radiotherapy and the copious and well selected bibliography.

C. J. H.

Minor Surgery. By Frederick Christopher, M.D., Associated Professor of Surgery, Northwestern University Medical School Chief Surgeon, Evanston (Illinois) Hospital. Sixth Edition with 937 Illustrations and 595 Figures. W. B. Saunders Company. Philadelphia and London. 1948. Price $12.00.

This new 6th edition of Christopher's "Minor Surgery" comes just four years after the 5th edition. It maintains the high quality of the previous editions and includes a considerable amount of revision of many sections.

Additions of note include the use of Heparin and Dicumarol in phlebothrombosis; gelatin and oxidized cellulose sponge in hemorrhage; intra-arterial injection of penicillin in infected extremities; fluid and electrolyte administration postoperatively; hypoproteinemia; and the use of the Padgett dermatome and the Miller-Abbott tube.

The book is highly recommended to all medical students and practitioners of surgery. B. S. P.

Occupational Medicine and Industrial Hygiene. By Rutherford T. Johnstone, M.D., Consultant in Industrial Health; Lecturer at the University of California, Los Angeles. Formerly Assistant Professor of Medicine, University of Pittsburgh School of Medicine; Formerly Director of Department of Occupational Diseases, Golden State Hospital. With One Hundred Seventeen Illustrations, Seven in Color. C. V. Mosby Company. St. Louis. 1948. Price $10.00.

In this, his latest publication on industrial diseases, Dr. Johnstone brings the information on industrial illnesses up-to-date. The recent war lent impetus to interest in industrial poisoning and much new information has been acquired. Much of this new information is included in this volume. To those interested in the subject of industrial medicine, the articles which are incomplete are supplemented by an excellent bibliography.

The book is divided into four parts. In the first part the author briefly outlines the history of industrial medicine, and the relationship of medicine to industry is defined. A plea is made for the training of medical students in industrial medicine by universities, a subject that in most universities is either entirely omitted or in which the training given is grossly inadequate. The misleading and highly conjectural testimony so frequently heard in compensation hearings is discussed. The need for scientific proof in medical legal controversy is shown and methods of obtaining such proof is outlined.

The second part deals with the industrial chemicals. The third part is devoted to the heavy metals including pathologic effects of beryllium. The chapter on lead absorption and lead poisoning is excellent. The errors concerning the effects and sequelae of lead as recorded in most of the recent literature on lead intoxication are noted, a service to medicine which has long been needed.

The fourth part of the book deals with the dusts. The two most important industrial dusts are dealt with in detail, that is, silica and asbestos. The inert dusts are discussed and listed so that the physician may determine readily the harmful from the nontoxic and nonfibrosis producing dusts. Included in part four are chapters on the industrial dermatoses, synthetics and special industrial processes. The last three chapters of the book are concerned with industrial hygiene, preemployment examinations and the placement program. A useful appendix of the trade names of common chemicals used in industry is included. The author writes in an interesting style using case histories to illustrate a point frequently. The book contains a number of useful charts and tables. This volume will be of great value to the industrial physician, medical students, the internist, compensation boards and to attorneys.

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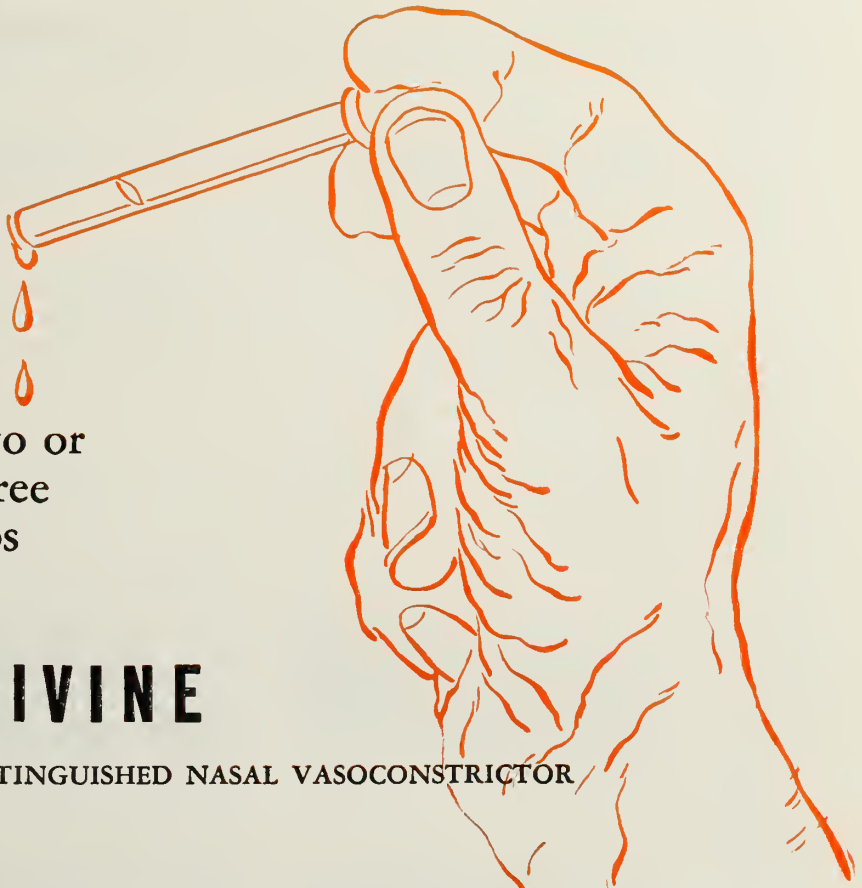


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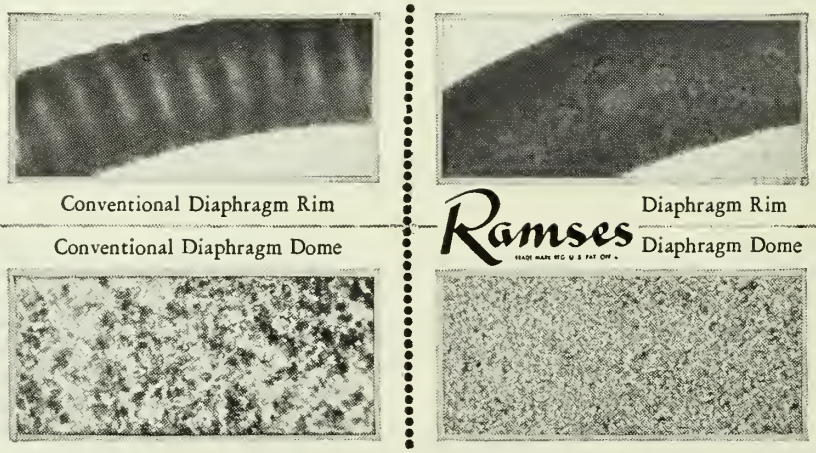
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OCTOBER, 1948

EDITORIALS

STATE MEDICINE

The *Bulletin of the Greene County Medical Society* for August carried the following editorial by F. T. H'Doubler, M.D., Springfield, editor of the publication:

"If our (the medical profession's) personal dislikes of state or socialized medicine happened to be the only argument against it, we would be whipped from the start. Of course, we do not personally like the idea of socialized medicine, but we are too small a minority to have what we personally like or dislike count for much of anything. But there are far more weighty reasons than our personal dislikes. If there were nothing more than the doctors' sentiments in the way, we would without much delay find this much talked of plan promptly put into effect.

"In fact, from a strictly selfish point of view, a doctor might be expected by some to join in the clamor for state medicine. It has been brought out that under state medicine the total income of the total medical profession would be increased. Competition among ourselves would be eliminated and uncertainty would be banished. No one about to practice or practicing medicine would have to worry about building or maintaining a practice or earning an adequate income.

"Nevertheless, in spite of these 'blessings,' we do not like the idea of state medicine, for two reasons: First, we would not enjoy practicing under such cock-eyed conditions. But, as already remarked, this reason concerns so small a minority that it would not be decisive. What is more important is this: we who have spent our lives in medicine and have seen how the practice of medicine works know (and we are in a position to know better than others) that state medicine would be a very very disappointingly inferior substitute for the present method of serving the sick of our land.

"State medicine has never worked out. That we know. It is a matter of record. We can easily understand this failure, for we know further why socialized medicine never will work and why it never can.

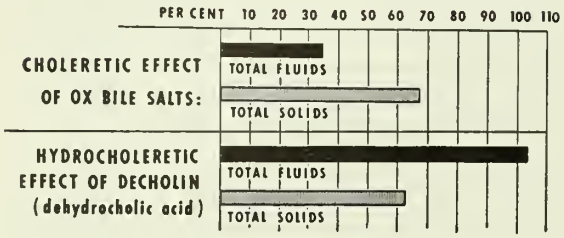
"Take away the privileges and possible rewards for extra hard work and the satisfaction of private practice and you will take away the incentive for undergoing prolonged training and for maintaining and further developing high proficiency once it is attained. Furthermore, politics would interfere with the workings of a natural merit system. There would be no special incentive to work hard and at inconvenient hours. A young man of intelligence, industry and ambition would find little in the flat level of state medicine to challenge him to spend long expensive years of hard work in college, medical school and hospital training—four years in college—four in medical school—and five in hospital training! And every day a long and arduous one—all without pay, the whole project based on the hope and gamble that proficiency and specialization will pay. Thus we see that under state medicine the better men would be attracted to other fields than medicine.

"This would not be the only cause for deterioration. Men practicing under state medicine would themselves deteriorate. When a patient chooses a doctor of his own free will, he is paying the doctor a compliment, and the physician is challenged to justify the patient's confidence in him. When a physician is in private practice, he is constantly on the alert to improve himself by reading, travel, attendance at meetings, so as to render the best possible service to his patients. Moreover, he is willing and glad to work hard and at all hours for his patients. He wants his practice to grow and not fall off. What would be his attitude under state medicine? There would be no incentive to do any more than just qualify to practice medicine. There would be no incentive to work hard or keep up-to-date once he is "qualified." Calls at irregular and inconvenient hours would be unwelcome. Add to all this the devastating effects of politics. The whole effect of state medicine is not a pleasant contrast to what we now have.

"Many people at large think that our opposition to state medicine is based upon a selfish desire to hold onto a 'racket' for which we at the time have a 'franchise.' We should embark upon a program of public education in which we show just what the effects of state medicine would be to the patient himself. It is true that the medical profession as a whole would have a greater income and more security under state medicine—but neither we nor the people would like the result!

"People want the personal satisfaction of choosing their own doctors—and occasionally a doctor may not choose to take on some patient. This personal relationship is most important. What is likewise important is that we want to keep medicine scientifically on a high plane of achievement always, with every incentive to go higher and higher. We also want to keep away from the slime of politics. Let's get busy individually and collectively on public enlightenment."

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26TH ANNUAL FALL CLINICAL CONFERENCE OF THE KANSAS CITY SOUTHWEST CLINICAL SOCIETY

The Kansas City Southwest Clinical Society will present its twenty-sixth Annual Fall Clinical Conference in Kansas City, October 4, 5, 6 and 7, 1948.

Sixteen distinguished guest speakers, representing general medicine and surgery and many of the medical and surgical specialties, will take part in the four day program. In addition, scientific talks will be given by forty-two members of the society in the morning sectional lecture groups.

The Monday evening session will open with talks pertinent to the future of the medical profession and military services. These addresses will be made by Rear Admiral H. L. Pugh, Assistant Surgeon General, U. S. Navy, and Colonel William H. Amspacher, Chief of Procurement Branch, U. S. Army.

The Clinicopathologic Conference, also on Monday evening, will be conducted by Howard T. Karsner, M.D., Professor of Pathology, Western Reserve University. Nine guest speakers will participate in this feature of the conference.

There will be two daily round table luncheons: one for general medicine and medical specialties, the other for general surgery and surgical specialties. Following each luncheon, one hour will be devoted to a question and answer period in which visiting physicians may direct questions to the guest speakers.

On Tuesday evening there will be a dinner and entertainment.

NEWS NOTES

O. S. Pate, M.D., North Kansas City, was a guest of the Lion's Club of North Kansas City on July 29.

J. J. Bredall, M.D., Perryville, has been appointed chairman of the Perry County Cancer Board of Perry County.

Ferdinand C. Helwig, M.D., Kansas City, is in Japan as a member of a five member lecture staff for army medical personnel in Japan and the Pacific area for the U. S. Surgeon General.

E. B. Quarles, M.D., St. Louis, has been appointed head of hospital administration of all Veterans Administration hospitals.

Edwin C. White, M.D., Kansas City, was elected president of the Missouri State Board of Medical Examiners at a meeting of the board in Jefferson City on August 15.

Vincent T. Williams, M.D., Kansas City, was a guest speaker before the Rotary Club of Liberty on September 2 and spoke on "Socialized Medicine."

The San Antonio Society of Pathologists will present its fifth annual tumor seminar, conducted by Shields Warren, M.D., Boston, at the Brooke General Hospital, October 23. B. F. Stout, M.D., San Antonio, is in charge of the session.

James A. Brown, M.D., has assumed his duties as Greene County Health Officer, located in Springfield.

The first postgraduate course for general practitioners on "Diseases of the Chest," under the auspices of the American Trudeau Society, 411 N. Tenth Street, St. Louis, will be presented January 17, 18 and 19, at St. Louis University School of Medicine, St. Louis.

MUSINGS OF THE FIELD SECRETARY

The Clay County Medical Society, composed of thirty-six members, is embarking on a new adventure. Members of this Society are sponsoring a Clay County Medical Society Clinical Conference to be held at the Elms Hotel, Excelsior Springs, Thursday, November 4. The program is pointed especially at the general practitioner. It will begin with a Round Table Luncheon discussion on "Arthritis" with questions by luncheon guests discussed by four specialists on the subject. The afternoon session will provide four outstanding speakers on subjects of practical interest. The evening program will begin with a dinner followed by two scientific papers on subjects much in the forefront today.

Members of the program committee of this Society have given much time and thought to the development of this excellent program. Here is concrete evidence of what a County Medical Society can do when a desire for worthwhile activity is present. This is their show and represents a contribution toward postgraduate instruction.

Approximately 1,500 invitations will be sent out to physicians in northwestern Missouri and northeastern Kansas inviting them to be present at this first Clay County Medical Society Clinical Conference. Registration is free and combined with other factors surrounding the setting of this meeting makes the date of November 4 a red letter date.

DEATHS

Calhoun, James G., M.D., St. Louis, a graduate of Washington University School of Medicine, 1896; honor member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 79; died July 5.

Traubitz, Arnold, M.D., Leadwood, a graduate of Barnes Medical College, 1906; honor member of the St. Francois-Iron-Madison-Washington-Reynolds County Medical Society; Fellow of the American Medical Association; aged 69; died July 17.

Clemens, James R., M.D., Webster Groves, a graduate of the Royal College of Surgeons, London, 1902; honor



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2. Haid, W. H.: The Use of Screening Tests in the Clinical Laboratory, J. Amer. Med. Tech., *8*:606-14 (Sept.) 1947.

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member of the St. Louis Medical Society; retired; aged 82; died July 18.

Edmondson, John Leonard, M.D., Stella, a graduate of the University Medical College of Kansas City, 1909; honor member of the Newton County Medical Society; aged 65; died July 22.

Gibson, Walter E., M.D., DeSoto, a graduate of Missouri Medical College, St. Louis, 1891; honor member of the Jefferson County Medical Society; aged 85; died July 23.

Schmidt, William Carl, M.D., Augusta, a graduate of St. Louis College of Physicians and Surgeons, 1898; member of the St. Charles County Medical Society; Fellow of the American Medical Association; aged 74; died August 9.

Paul, John B., M.D., Kansas City, a graduate of the Kansas City Medical College, 1897; member of the Jackson County Medical Society; Fellow of the American Medical Association; aged 77; died August 15.

Milligan, Roy H., M.D., St. Louis, a graduate of St. Louis University School of Medicine, 1915; member of the St. Louis Medical Society; Fellow of the American Medical Association; aged 59; died August 18.

Heller, Edward P., M.D., Kansas City, a graduate of Jefferson Medical College of Philadelphia, 1916; member of the Jackson County Medical Society; Fellow of the American Medical Association; aged 56; died August 19.

MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for October and November, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

October 1: Gynecology and Genitourinary.
October 6: Miscellaneous.
October 8: Breast.
October 13: Skin.
October 15: Cervix.
October 20: Gastrointestinal.
October 22: Head and Neck.
October 27: Skin.
October 29: Miscellaneous.
November 3: Miscellaneous.
November 5: Gynecology and Genitourinary.
November 10: Skin.
November 12: Breast.
November 17: Gastrointestinal.
November 19: Cervix.
November 24: Skin.
November 26: Head and Neck.

GOVERNOR DEWEY AND SOCIALIZED MEDICINE

The following open letter to the Honorable Thomas E. Dewey was carried in the *Jackson County Medical Society Weekly Bulletin.* The letter and the answer follow.

"The Honorable Thomas E. Dewey
"Governor of the State of New York
"Executive Mansion
"Albany, New York
"*Dear Governor Dewey:*

"Your extemporaneous remarks, recently addressed to the Oregon State Medical Society, dissipated the clouds of sinister propaganda which for years have emanated from certain governmental agencies and other similar sources.

"To many thousands of practicing physicians (of whatever political complexion) your message carried new hope. This is the first intelligent and comprehensive appraisal of national health matters which has been made public by a selected presidential aspirant, or by a President of the United States, for that matter. Putting it mildly, we were overwhelmed, but delighted, to hear this problem discussed objectively by someone who—after investigating thoroughly both sides of the issue—actually knew what he was talking about.

"The medical profession has preached (and, with understandable hesitancy, has practiced) according to one dictum: Give Americans the best medical system, determined by cautious experimentation, which would lead to evolution, not revolution, in American health-insurance technics. We oppose vehemently the adoption of foreign ideologies which have been conspicuous failures, according to American criteria.

"You have expressed your repugnance for these alien theories so clearly, so logically and so unequivocally, that no physician (who esteems his profession second only to his love of country) could conceivably withhold approval or appreciation of your stand. We thank you for being just plain honest!

"But what of Governor Warren? Your views and his are as opposite as black and write. He is alleged to have declared (in effect) that he would not leave the Governor's Chair until he had rammed through compulsory health schemes in California. What of him?

"News report, with national distribution, credit you as stating that Governor Warren is to have more duties, more responsibilities and more functions than ever before accorded a Vice-President. That's swell. It has finally dawned on almost every thinking citizen that if each President would but say to himself: 'I am here for just one short span. May God help me do the best I can without at any time trying to perpetuate myself and my gang'—we'd have the perfect picture of a President. And, to do this properly, the President does need competent, adequate helpers and advisors. All this would strengthen immeasurably our democratic system. So again: Swell!

"Give Warren plenty of work, if that is your desire. But as the 'Crime-Doctor' would say: 'There is just one little detail' we would like to know: Is it Dewey or Warren who will call the turn on this monstrosity termed 'health-insurance'?

Again, please accept the thanks of many who deeply appreciate the thought, the logic, the courage and the real Americanism you personally have displayed concerning this topic. This course requires more than political expediency, it necessitates putting the good of all our Country first. Yet, there still remains that scintilla of doubt and question, which you could resolve so easily if you will.

"We would be honored to carry your reply to the physicians (and others) of Missouri, and to many in our Nation.

"Sincerely and respectfully,
"Vincent T. Williams, M.D."

The answer to the letter follows:



at
Miami, Florida

AN INSPIRING MEDICAL MEETING—the Annual Meeting of the Southern Medical Association in Miami, Florida, October 25-28. In the general clinical sessions by Miami physicians and surgeons, the twenty-one sections and the scientific and technical exhibits, every phase of medicine and surgery will be covered—the last word in modern, practical, scientific medicine and surgery. Addresses and papers by distinguished clinicians not only from the South, but from many parts of the United States.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Miami a scientific program and recreational facilities to challenge his every interest and make it worth-while for him to attend.

ALL MEMBERS of state and county medical societies in the South are cordially invited to attend. And all members of state and county medical societies in the South should be and can be members of the Southern Medical Association. The annual dues of $5.00 include the Southern Medical Journal, a journal valuable to physicians of the South, one that each should have on his reading table.

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From where I sit
by Joe Marsh

Now It's Neckties Made of Milk!

Fellow in Andy Botkin's Tavern the other day was boasting about a trick necktie he was wearing made out of a by-product of milk. "Took 33 pounds of milk to make this tie," he says.

Bill Webster was unimpressed. "Personally," he says, "I'd rather *drink* the milk. Just as I wouldn't change one glass of good American beer for a necktie made from thirty barrels of it!"

Yes—modern science being what it is—seems like you can make "anything out of anything" these days. But in the case of milk, well I guess drinking it is still a whole lot better than just wearing it.

Of course there are a whole lot of other ways of abusing goods and beverages—like a fellow who doesn't appreciate a glass of beer enough to drink it slowly and in moderation.

But from where I sit, most people who enjoy a wholesome beverage like beer or ale are *moderate—because beer itself is a beverage of moderation.*

Joe Marsh

Copyright, 1948, United States Brewers Foundation

"State of New York
"Executive Chamber
"Albany, New York
"September 9, 1948.

"Vincent T. Williams, M.D.,
"836 Argyle Bldg.,
"Kansas City, Mo.

"Dear Dr. Williams:

"On behalf of Governor Dewey, I acknowledge with thanks your letter of August 23 with the enclosures.

"He is most appreciative of your friendly interest and support. You may be quite sure that the Governor has not changed his view on socialized medicine since May.

"With best wishes and thanks in advance for such help as you can give in the campaign, I remain

"Watson Washburn, Acting Secretary."

SOCIETY PROCEEDINGS

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

North Central Counties Medical Society

The North Central Counties Medical Society met at the office of S. L. Freeman, M.D., Kirksville, at 8:00 p. m. September 9, with the following present: J. S. Montgomery, M.D., Milan; Clifford E. Henry, M.D., S. L. Freeman, M.D., J. B. Jones, M.D., G. R. Hudson, M.D., George E. Grim, M.D., and Ralf Hanks, M.D., Kirksville; J. S. Gashwiler, M.D., Novinger.

The minutes of the last meeting were read and approved.

S. L. Freeman, M.D., Kirksville, gave a talk on "Glaucoma."

George E. Grim, M.D., Kirksville, discussed "Hematuria."

Both discussions were instructive and interesting.

J. S. Gashwiler, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central Counties Medical Society

The South Central Counties Medical Society met in Cabool August 20 for dinner at the El Patio Hotel with the following present: J. A. Fuson, M.D., Mansfield; R. W. Denney, M.D., and A. C. Ames, M.D., Mountain Grove; Garrett Hogg, M.D., Cabool; T. J. Burns, M.D., Houston; C. T. Callihan, M.D., Willow Springs; E. C. Bohrer, M.D., West Plains; Ned White, M.D., and Kenneth Coffelt, M.D., Springfield.

Following dinner the president, Dr. Callihan, called the meeting to order in the office of Dr. Hogg.

A letter from the Wright County Health Council was read outlining a plan to roentgen ray the chests of all who wish it in the county and asking the approval of the Society. This was given unanimously.

Dr. White gave a worth while talk on diet in pregnancy, stressing the need for proteins, minerals and vitamins and the avoidance of an excess of fats and carbohydrates.

Dr. Coffelt discussed some of the things to be considered in general diagnosis and points that should not be overlooked.

A vote of thanks was given the speakers.

The meeting adjourned to meet in Mountain Grove on September 17.

A. C. Ames, M.D., Secretary.

Carter-Shannon County Medical Society

The Carter-Shannon County Medical Society met in the office of T. W. Cotton, M.D., Van Buren, at 4:00 p. m., August 28.

Topics for discussion included trachoma and hardening of the arteries. A case report on high blood pressure complicating albuminuria was given. A case of trachoma was presented and discussed.

Following the meeting members attended a Rotary Club meeting and dinner.

Those present were Frank Hyde, M.D., and W. T. Eudy, M.D., Eminence; T. W. Cotton, M.D., Van Buren; Robert I. Davis, M.D., Birch Tree.

W. T. Eudy, M.D., Secretary.

BOOK REVIEW

Practical Bacteriology, Hematology and Parasitology by E. R. Stitt, M.D., Rear Admiral, Medical Corps, and Surgeon General, U. S. Navy, Retired; Paul W. Clough, M.D., Physician-in-Charge of the Diagnostic Clinic, Johns Hopkins Hospital; Assistant Professor of Medicine, Johns Hopkins University; Associate Professor of Medicine, University of Maryland; Sara E. Branham, M.D., Senior Bacteriologist, National Institute of Health; Professorial Lecturer in Preventive Medicine, The George Washington University School of Medicine; Chairman, Laboratory Section, American Public Health Association, 1946-1947, and Contributors. Tenth Edition. Philadelphia. The Blakiston Company. 1948. Prices $10.00.

The first edition of Admiral Stitt's book was approximately forty years ago. At that time, so many years ago, this was the first really good book that was written on clinical pathology. It served for years as a favorite and most authoritative textbook in the English language. It was constantly brought up to date by its author.

Since his retirement from active duty in the U. S. Navy, Admiral Stitt has called upon Clough and Branham for more recent editions. Both these workers are skilled and well informed authorities on this subject. In addition to these editors and authors, many of the experienced workers at the U. S. Naval Medical School have assisted in making this at all times a valuable guide book.

The present, tenth, edition is like its predecessors, up to the minute in describing laboratory procedures and their interpretations. It has been a genuine pleasure to read this book and note its constant development. As an old friend of the senior author, I have always taken great pride in using the book and have always found it quite useful. This book may well serve as a monument to his untiring efforts in building up the Medical Corps to its present lofty position and in giving the laboratory side of medicine its proper place in that establishment.

The reader will find everything that he may want to know about laboratory medicine in this book. It is well and abundantly illustrated. I am sure that it will meet with the same enthusiastic reception that has been accorded previous editions. R. B. H. G.

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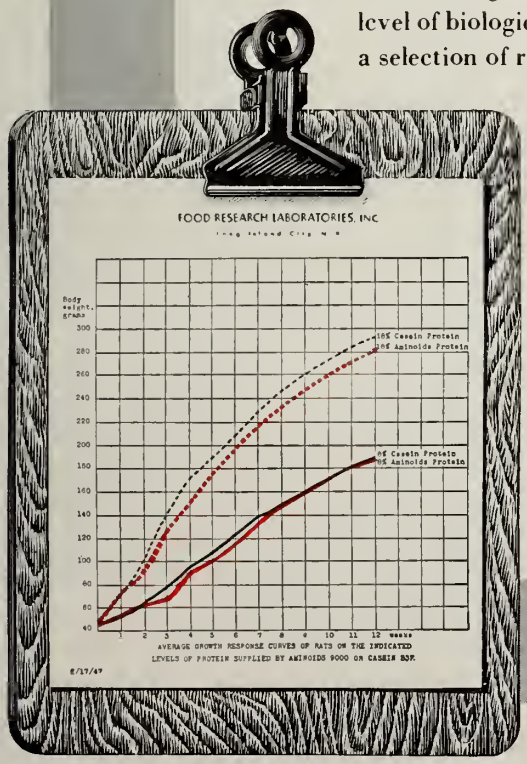
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Lysine — Kossel Block	2.44	5.8
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Tryptophan — Millon Lugg	0.56	1.3
Phenylalanine — Kapellar Adler	2.44	5.8
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Methionine — Sullivan McCarthy	1.03	2.4
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Speech and Voice Correction edited by Emil Froeschels, M.D., President, International Society for Logopedics and Phoniatrics; President, New York Society for Speech and Voice Therapy. Philosophical Library. New York. 1948.

Many of the latest developments in the field of voice and speech correction are included in this volume. Since the field is a large one, each chapter was written by a leading authority in his particular branch of the work.

Such speech and voice problems as those of the deaf and hard of hearing, asphasics, stutterers, cleft palates, dyslalias and laryngectomy patients are discussed, as well as the education of the speaking and singing voice.

The book should be of great interest and benefit to anyone concerned with his own speech and voice difficulties and especially to the doctors and teachers whose chief aim it is to improve and correct speech impediments. C. E. S.

Oculorotary Muscles. By Richard G. Scobee, M.D., Instructor in Ophthalmology, Washington University School of Medicine, St. Louis, Mo. Illustrated. C. V. Mosby Company. St. Louis. 1947. Price $8.00.

Beginning with the anatomy of the parts involved in the complicated and confusing problem of strabismus, through the physiology of muscles and nerves, Scobee gives admirably clear and definite exposition of these fundamental requirements. Both illustrations and descriptions good, easy to read and to understand. There is commendable consideration of the important question—"why are straight eyes straight," understanding of the many influences active in orthophoria being essential to understanding of the many varieties of motor deficiency.

Following chapters concern the isolated and combined actions of nerves and muscles, the phorias, the tropias, the methods of diagnosis of all the deviations with their complicating ductions, vergences, diplopia, fusion, stereopsis and principles of treatment and operations. Detailed steps of surgical technic are not given, "there are other books which do this very nicely," but the general principles of surgical procedure are given in detail, and are said to be "quite simple and easy to apply." There is not quite sufficient consideration of the fact that fusion and stereopsis are functions of the brain, the eyes participating only under brain control.

Noticeable is advocacy of the "orthopedic principle" of weakening the strong antagonist rather than strengthening the paretic muscle.

This is a splendid work, an important contribution to elucidation of the "kaleidoscopic panorama of strabismus." R. J. C.

Sociology and Social Problems, An Introduction to, A Textbook for Nurses, by Deborah MacLurg Jensen, R.N., B.S., M.A., Assistant Director, School of Nursing, St. Louis City Hospital; Instructor in Nursing Education, Summer School, Simmons College, Boston. Formerly Supervisor of Clinical Instruction in Nursing, University of Minnesota; Assistant Director, School of Nursing, Washington University, St. Louis; Assistant Professor in Nursing Education, Summer School, University of Chicago. Illustrated. Third Edition. C. V. Mosby Company, St. Louis. 1947. Price $3.75.

This book has been written principally for the nurse relative to the new concepts of the function of the professional nurse in today's society—primarily that, as Mrs. Jensen states, "Every nurse is a community nurse." It is the third edition to follow the first writing in 1939, necessary to bring the rapidly changing social data up to date.

The author presents a clear understanding of the bearing of social aspects upon the patients health; that they must be dealt with and understood to treat the total patient situation. There are numerous charts showing current statistical data, lists of community agencies to which the patient may be referred, a fairly complete glossary of related words, and good reference lists for more thorough study of the sociologic divisions, all of which add to the worth and utilization of the book.

Mrs. Jensen has divided the book into two parts, the first dealing with the elements of sociology and the latter with social problems. While the first section is complete as far as including the elementary parts of sociology, it lacks in presenting clear sociologic concepts necessary if more extensive study is desirous. The latter part is unusually good in its categorical division of the social problems and in turn relating them to etiologic factors in disease, its prolongation and reoccurrence, as well as the reverse picture of the illness creating the problem.

The book would prove valuable to the person, particularly in the nursing profession, desiring to gain a rapid general knowledge of sociology and have supplemental worth for the person making a more concise study of the subject. D. W. M.

Office Immunology, Including Allergy, A Guide for the Practitioner. Edited by Marion B. Sulzberger and Rudolf L. Baer. Authors: Marion B. Sulzberger, M.D., Professor of Clinical Dermatology and Syphilogy and Director, New York Skin and Cancer Unit, New York Postgraduate Medical School and Hospital; W. C. Spain, M.D., Clinical Professor of Medicine, New York Postgraduate Medical School and Hospital; Rudolf L. Baer, M.D., Instructor in Dermatology and Syphilology, New York Skin and Cancer Unit, New York Postgraduate Medical School and Hospital; Abram Kanof, M.D., Adjunct Pediatrician, Jewish Hospital, Brooklyn; Alfred J. Weil, M.D., Lederle Laboratories, Division, American Cyanamid Company; and Naomi M. Kanof, M.D., Associate Attending in Dermatology, Garfield Memorial and Children's Hospitals, Washington, D. C. Chicago: The Year Book Publishers, Inc. 1947. Price $6.50.

"Office Immunology" should fill a real need. The authors have given a detailed account of the methods for the approach to problems in allergy, whether respiratory, dermatologic or miscellaneous. Throughout the book technics and interpretations of various tests are meticulously handled in order to reduce erroneous conclusions to a minimum. The book presents information that, although previously published, has not been compiled in one volume.

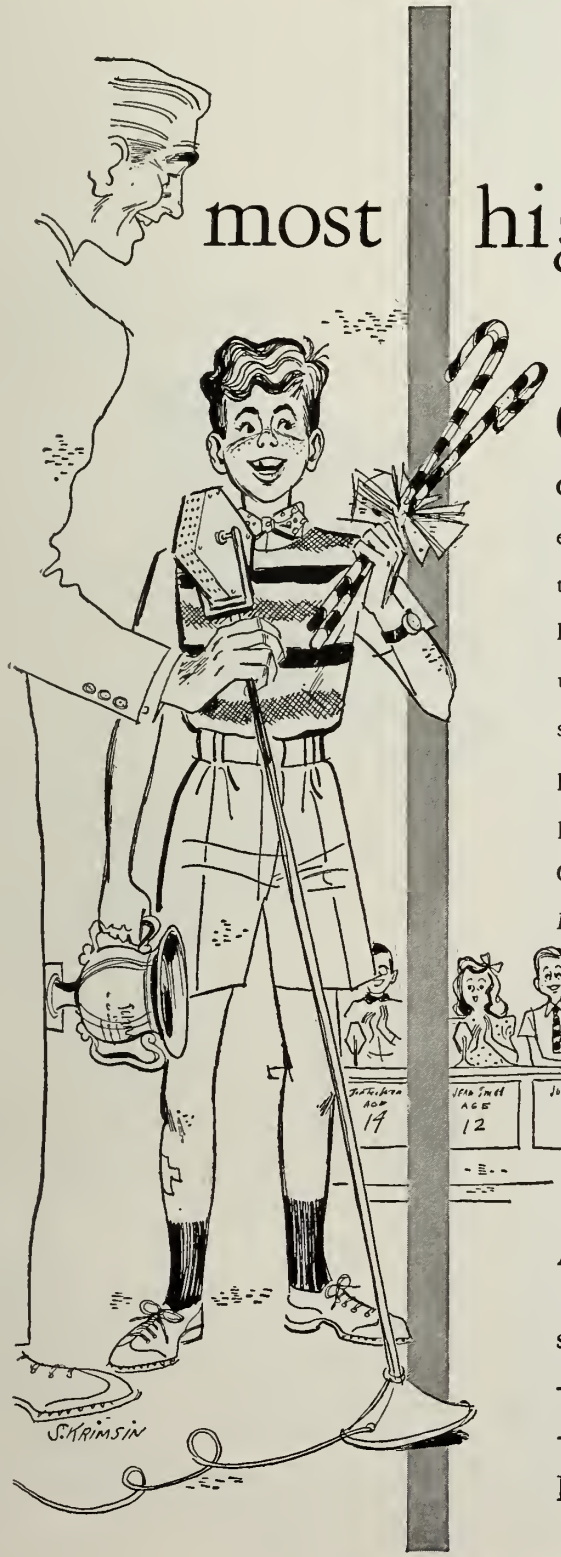
Indications for and the relative value of patch tests, scratch tests, intracutaneous, ophthalmic and clinical tests are put forth in a readable and practical form. Stress is placed on a history of the patient's allergy and a clinical evaluation of the individual rather than upon external sensitivity tests.

An outline of active and passive immunization to infectious diseases gives the incubation period, prodromal symptoms, prophylaxis, indications for immunization and the probable duration of immunity. A list of the materials available, the manufacturers' trade names, the manner of packaging and dosage of immunizing agents is tabulated. This summary is an adjunct to any practitioner's library.

Finally, a similar brief of the accepted treatment for spider bites, insect bites and snake bites is also available in this text.

"Office Immunology" is recommended because it is a résumé of volumes of data and because of its clinical approach to problems in allergy and immunity.

P. A. G. J.



most highly regarded

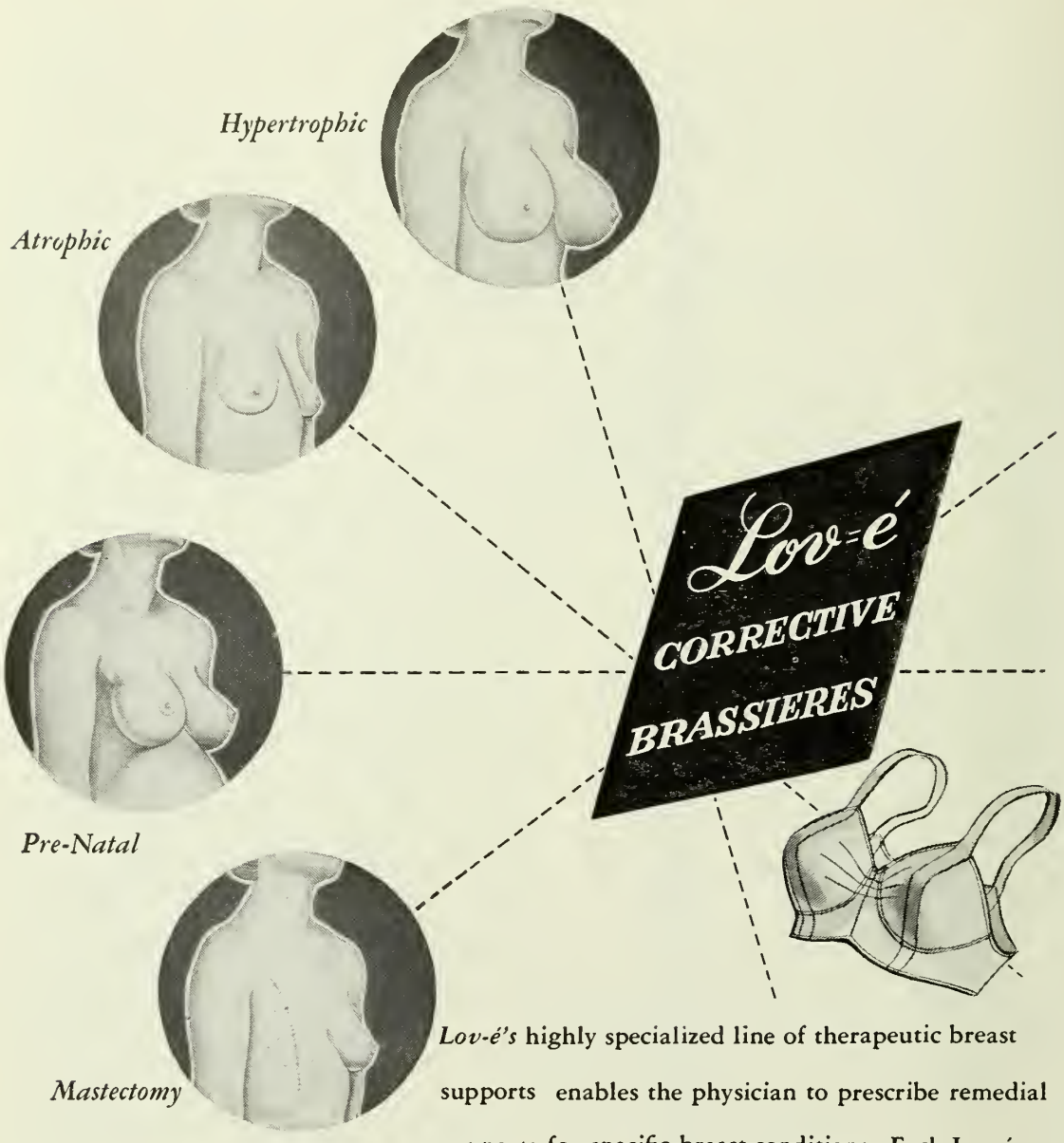
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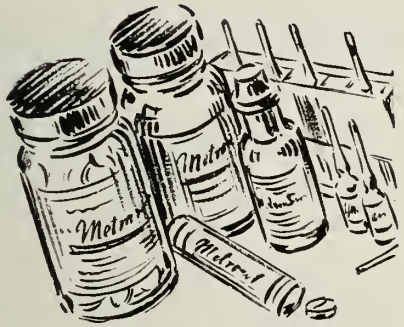
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*R. H. Follis, D. Jackson, M. M. Eliot, and E. A. Park: Prevalence of rickets in children between two and fourteen years of age, Am. J. Dis. Child. 66:1-11, July 1943.

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THE
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VOLUME 45
NUMBER 11

NOVEMBER, 1948

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The Eradication of Tuberculosis in Rural Areas
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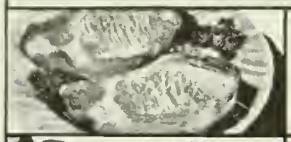
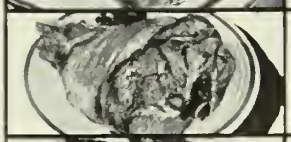
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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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Constitution and By-Laws—B. Landis Elliott, Kansas City, Chairman (1950); J. H. Summers, Lebanon (1951); John J. Hammond, St. Louis (1950); S. R. McCracken, Excelsior Springs (1949).

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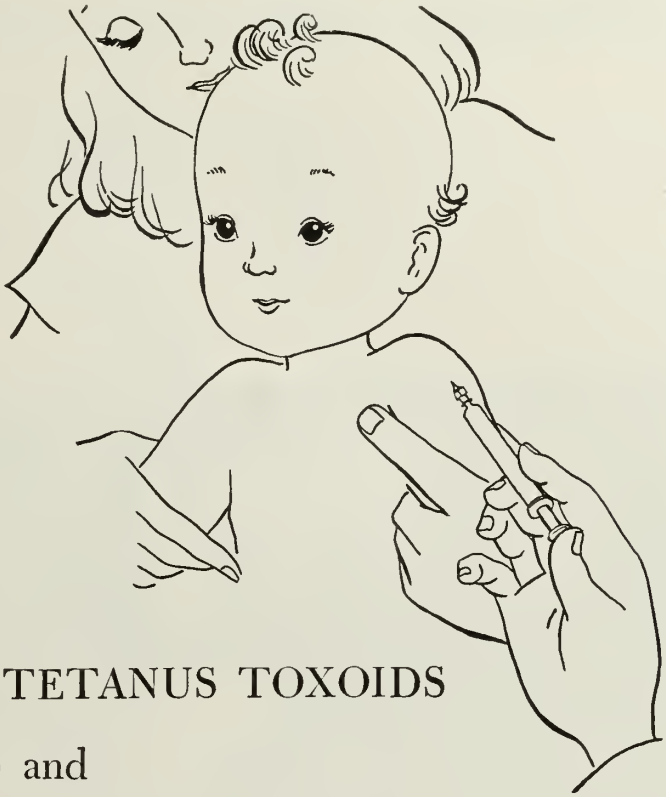
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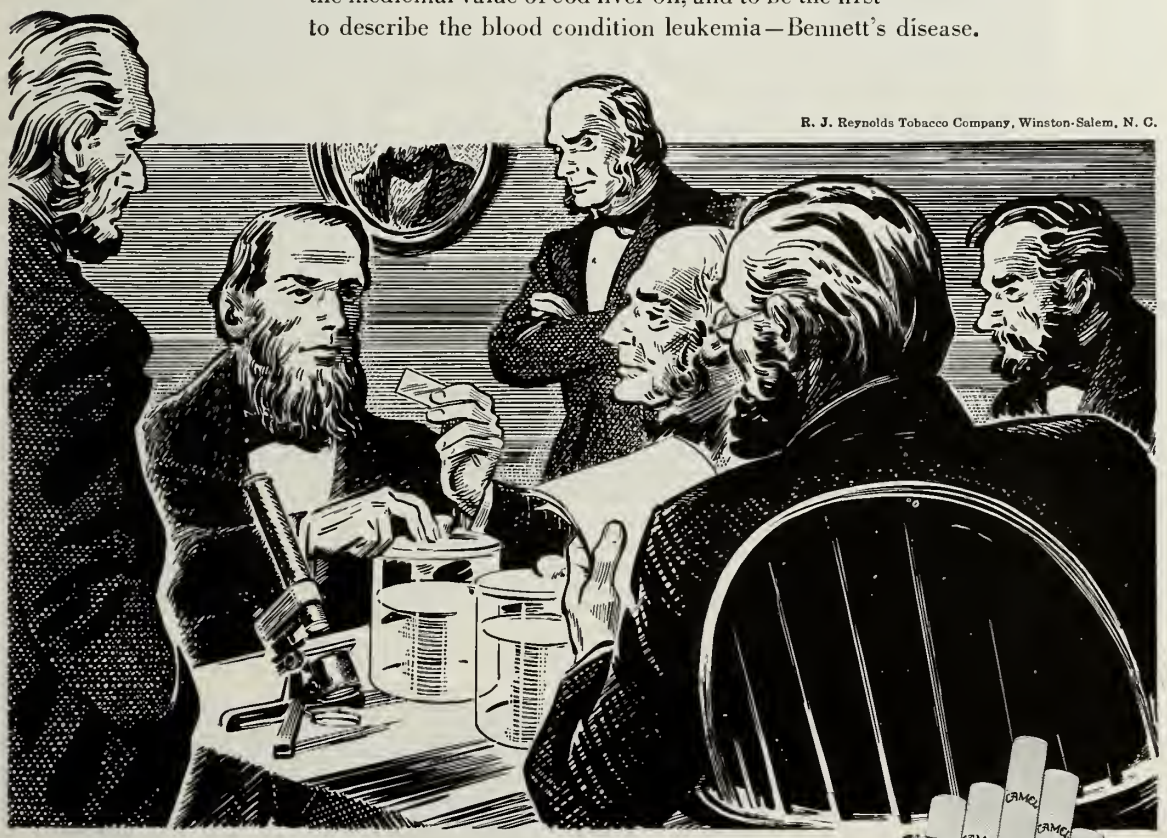
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Benton	6	T. S. Reser	Cole Camp	James A. Logan	Warsaw
Boone	5	James Baker	Columbia	Helen Yeager	Columbia
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Carter-Shannon	9	F. Hyde	Eminence	W. T. Eudy	Eminence
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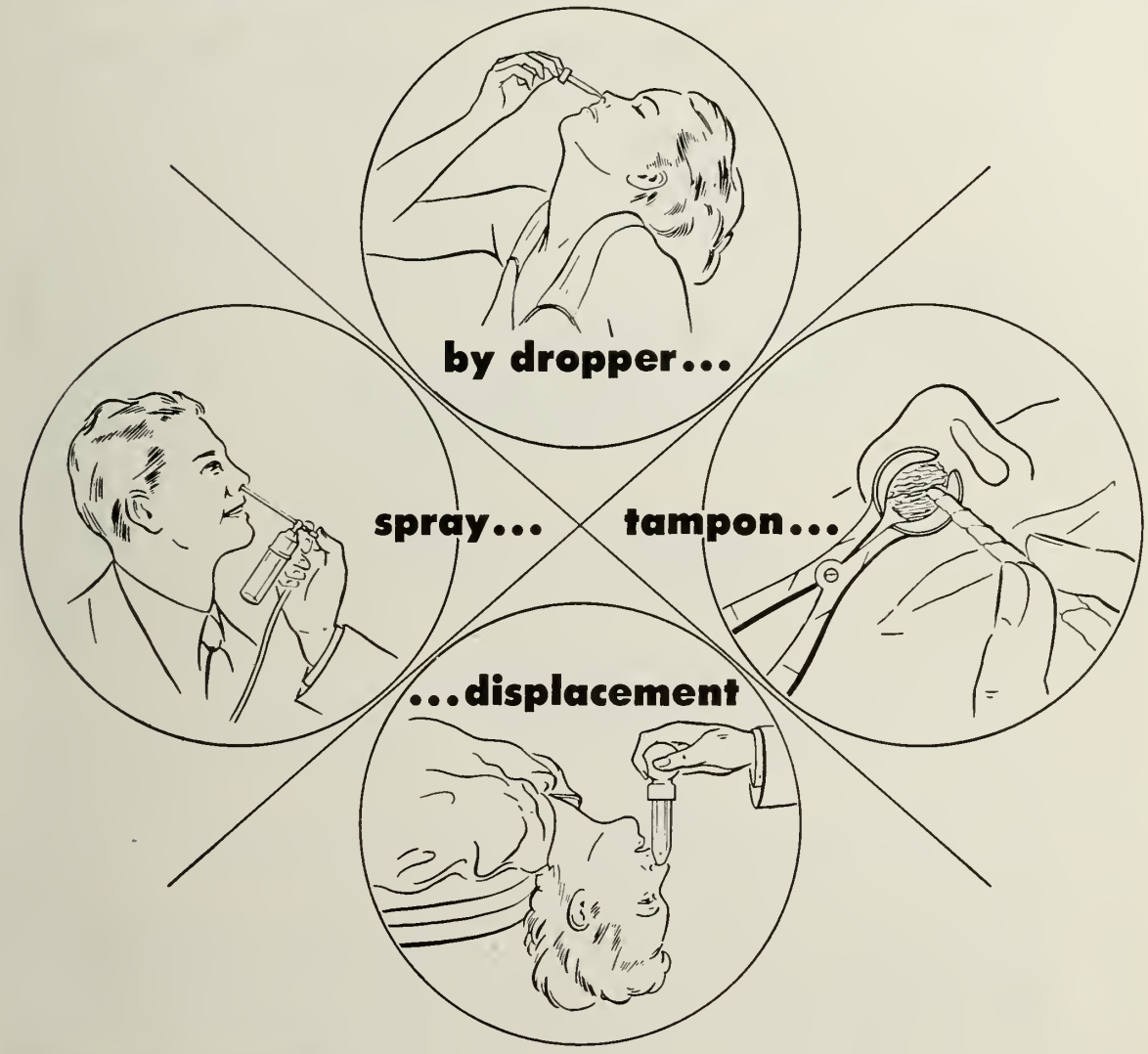
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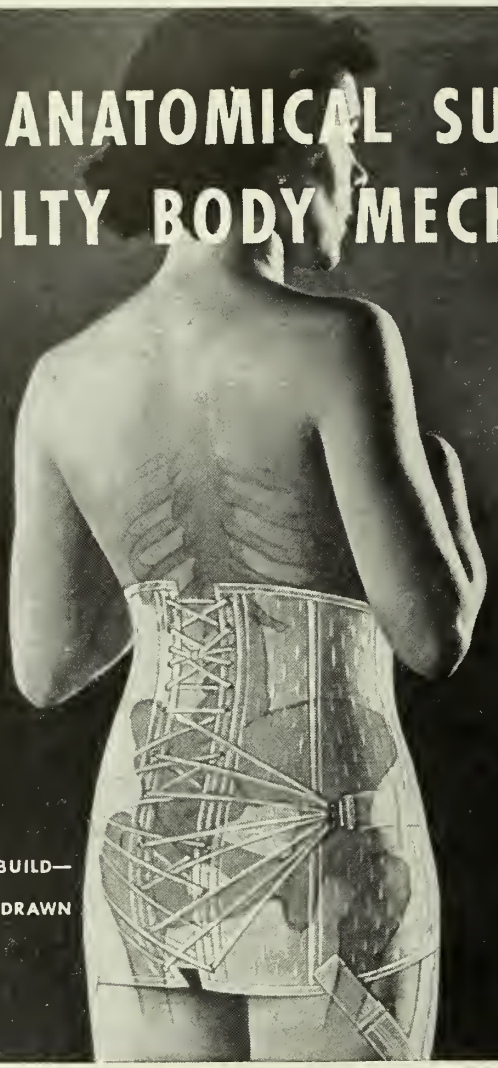
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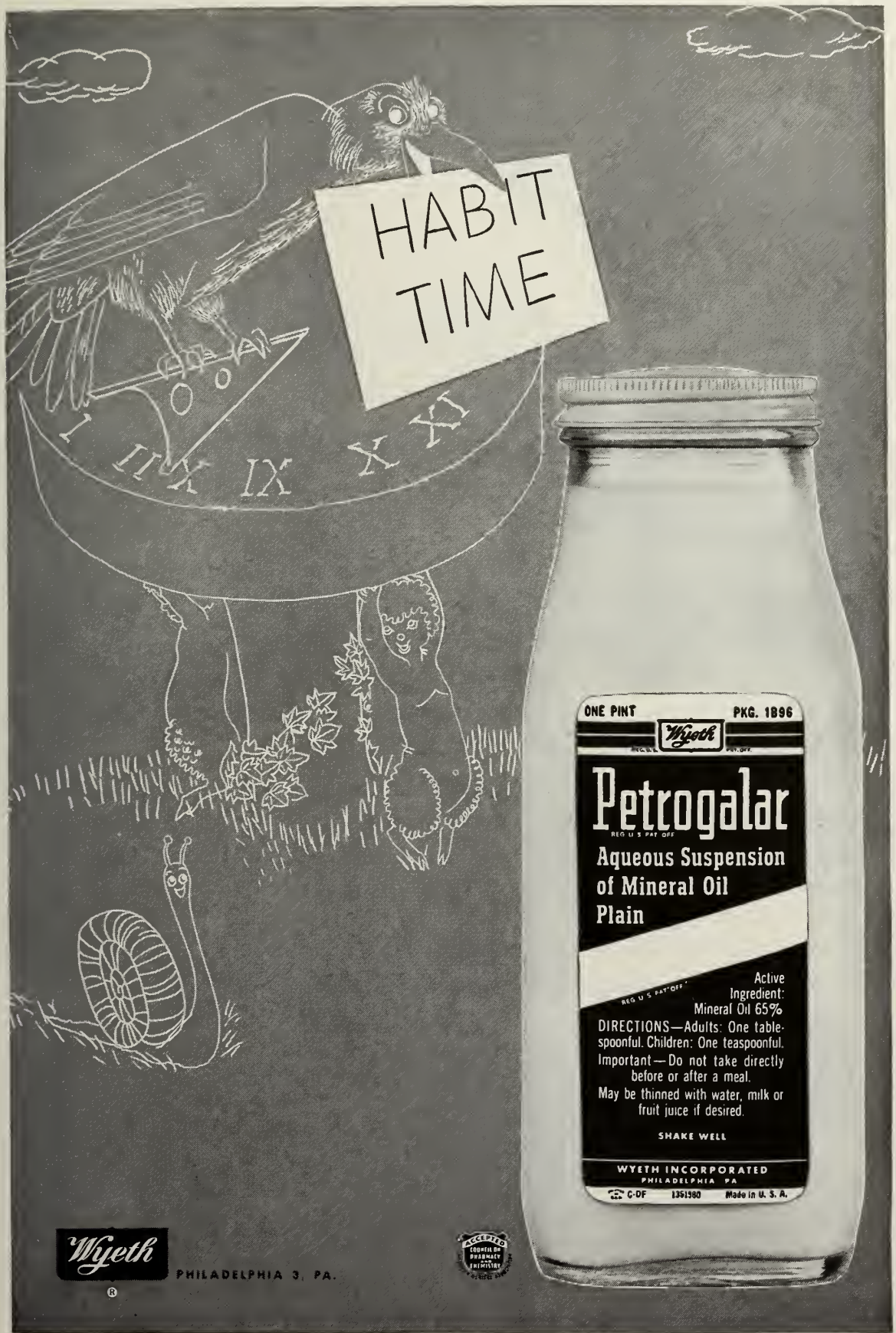
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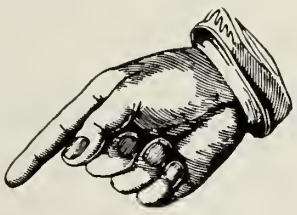
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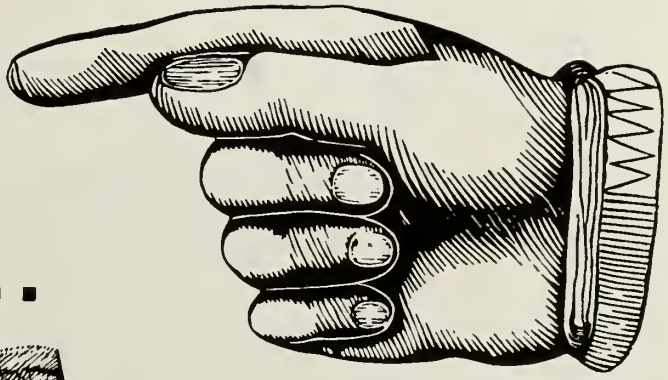


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VOLUME 45 — NOVEMBER, 1948 — NUMBER 11

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THE ERADICATION OF TUBERCULOSIS IN RURAL AREAS

LEWIS S. JORDAN, M.D., *Granite Falls, Minnesota*

INSPIRED BY THE accomplishments of the work of the veterinarians in the eradication of tuberculosis among the cattle by the use of the tuberculin test, it was decided in 1930 to institute a similar, but modified program, in the Riverside Sanatorium district of Minnesota. It was felt at that time that intensive Mantoux testing of the school children and young adults with sufficient follow-up work would lead to the various open cases, which were the infective factors in the areas. With this in mind, plans were formulated.

This district, with an area of 3,800 square miles, is located in the south central and western part of the state and is comprised of four large counties, Chippewa, Yellow Medicine, Lac qui Parle and Renville. It has twenty-seven small cities and towns and approximately 265 rural schools. The tuberculosis control work as planned in 1930 had the following aims:

1. To discover the infected children so they could be observed throughout their school career and on into adulthood.
2. To trace wherever possible the source of infection for each child found to be a tuberculin reactor.
3. To eliminate the infective factor by breaking the contact with the child, preferably by institutionalizing the persons with positive sputum, or, otherwise controlling their disease.
4. To examine all adult contacts of the children in the schools including teachers, janitors, bus drivers, cooks, office help.
5. To institute an educational program including talks, movies and literature to reach all lay groups and civic organizations.
6. To institute a follow-up program, checking each tuberculin reactor by roentgen ray films of the chest, at least once a year, or more often if indicated.
7. To obtain 100 per cent cooperation of the state and local medical societies.
8. To aid the veterinarians' program of eradication of tuberculosis among animals, particularly cattle so no humans would be infected with the bovine type of tubercle bacilli.

With this eight point program as a guide, work was started. An intensive educational program was begun to gain the cooperation of school boards, lay organizations such as Rotary, Kiwanis, Lions, Commercial Clubs, American Legion, Parent Teacher organizations, Farm Bureau groups.

With the backing of these organizations, and a ruling by the Attorney General, Harry H. Peterson, "that the Mantoux skin test for teachers and other school employees is a reasonable exercise of police powers of the school boards, if required for the purpose of safeguarding the health of the pupils of public schools," the Mantoux surveys were instituted.

School boards could legally require all employees, including teachers, to prove themselves safe to act as guardians of children during the school hours. Each child was given a blank form, to be signed by the parent or guardian, giving consent for the administration of the Mantoux test and, if a reaction occurred, a roentgen ray film of the chest. No test was done without written permission. At the same time it was explained that it would be necessary to roentgen ray all reactors and, if the individual were able to pay, a fee, $1.00 would be charged to partially cover the cost of the film. The additional cost of the entire examination was derived from Christmas Seal, plus Sanatorium money. For persons unable to pay, the entire expense was borne by this fund. All reactors were roentgen rayed regardless of their ability to pay. Care was taken to explain that the $1.00 did not cover the cost of the work and materials and

that the balance was provided by Christmas Seal money and the Sanatorium.

The goal was high even in the early days of the program. The rule was established that the children of no school would be tested unless consent blanks were returned by a minimum of 80 per cent of the pupils. This placed the responsibility of the testing program on each community where the work was to be done. Parent teacher groups worked hard to obtain the 80 per cent consents. A spirit of rivalry developed between various towns and schools, which practically always assured the success of the program. Every effort was made to retest the schools each two years. Saranac Lake old tuberculin 1:1000 strength was used in the tests. Comparisons of O. T. 1:1000 and PPD were used on certain occasions during the years, as were readings at forty-eight to seventy-two and ninety-six hour intervals. As a result of the latter observation, it was decided that a seventy-two hour reading is, for general purposes, in all probability somewhat more accurate than the forty-eight hour intervals owing to the fact that it detects some of the so-called "delayed reactors," as well as eliminates the possibility of interpreting small areas of erythema due to trauma and such as tuberculin reactions.

In every instance diligent search was made to determine where the reactors received the infection. In this the field nurse and the knowledge of the family physicians proved of great value. In many instances, the source of infection was found in a grandparent, an uncle, an aunt, hired man, who had unsuspected or undiagnosed infectious tuberculosis. During the first several years that this program was conducted in schools, twelve teachers were found with demonstrable pulmonary tuberculosis of which eight had positive sputum. In one room, in one of the larger schools, 42.6 per cent of the pupils reacted to the Mantoux test. The teacher also reacted and the roentgen ray film of the chest revealed evidence of disease which was proved to represent far advanced "C" pulmonary tuberculosis. This teacher died in a sanatorium within sixty days of discovery. Of the pupils who reacted to tuberculin in his room, two developed demonstrable active pulmonary tuberculosis within a year.

All teachers and school employees found to be a menace insofar as tuberculosis infection is concerned were removed from their contact with the children. This work went on yearly with pleasing results. More than 50,000 children were tested and the percentage of tuberculin reactors found in the same schools decreased as the years passed.

The following table shows the decrease in the percentage of tuberculin reactors observed during the years of the surveys:

	Year	Percentage Reactors
Clara City	1935	11.6
	1946	0
Clara City (Parochial)	1934	30.5
	1946	0
Boyd	1931	15.6
	1946	0
Bird Island (Parochial)	1931	25.7
	1947	2.2
Bellingham	1935	7.5
	1946	0
Fairfax (Parochial)	1934	6.9
	1946	0
Milan	1930	18.6
	1946	0
Olivia	1934	14.4
	1946	2.7
Rosen	1934	8.8
	1946	0
Nassau	1937	8.8
	1946	0
Madison (Parochial)	1934	8.1
	1946	0
Echo	1931	10.8
	1946	2.6
Montevideo	1934	13.6
	1946	3.4
Marietta	1931	17.9
	1946	3.4
Olivia (Parochial)	1934	11.5
	1946	4.1
Hanley Falls	1932	11.7
	1946	1.3
Boyd (Parochial)	1931	15.6
	1946	1.8
Fairfax	1934	21.3
	1946	1.7
Wood Lake	1930	8.6
	1946	1.8
Clarkfield	1933	9.6
	1946	4.1
Morton	1934	13.6
	1946	2.7
Sacred Heart	1933	21.2
	1946	3.0
Franklin	1934	12.2
	1946	3.5
Renville	1934	7.4
	1946	4.2
Yellow Medicine County	1935	8.2
	1947	3.0
Rural (84 Schools)	1946	.9

When this work was begun in 1930, an average of 13.9 per cent of all of the school children reacted to tuberculin.

Following a report, the Minnesota Sub-Committee of Tuberculosis of the American School Health Association (consisting of such persons as Dr. E. A. Meyerding, St. Paul; Dr. J. A. Myers, Minneapolis, and Dr. S. A. Slater, Worthington, all inspiring leaders and pioneers in this work) was organized. In 1943 this committee prepared standards by which individual schools or whole systems in Minnesota might be certified with reference to tuberculosis. In order for a school to be certified, it must meet these standards which pertained to tuberculosis control work in progress. Those meeting the highest standard were offered Class "A" certificates, while those with slightly lower qualifications would receive Class "B" certificates. The require-

ments for Class "A" certification are briefly, as follows:

1. Testing from 95 to 100 per cent of pupils and making roentgen ray films of the chest of all reactors.

2. Testing 100 per cent of the school personnel and requiring roentgen ray films of the chest of all reactors. This includes teachers, janitors, bus drivers, cooks, clerical help.

3. Completing the examination of all who presented roentgen ray shadows which might be caused by a tuberculosis lesion.

4. Conducting an educational program for the staff of each school so that the principles of tuberculosis control would be understood.

5. All nonreactors to tuberculin to be retested each two years.

6. All reactors to be roentgen-rayed each year, unless more frequent inspections were especially indicated.

For the Class "B" certification, the requirements were exactly the same as for Class "A" except that only 80 to 95 per cent of the pupils had to be tested.

In January 1946, work was begun in an attempt to accredit as many schools as possible under this new program of the American School Health Association.

A summary of the 1946-1947 work toward accrediting all of the schools is as follows:

Number of schools tested	277
Number of schools certified	225
Class "A" certificates awarded	161
Class "B" certificates awarded	64
Number of schools 100 per cent tested	138
Number of schools with no tuberculin reactors	219
Number of children tested	12,666

The percentage of school children tested and the percentage of reactors found in each of the four counties in 1946-1947 is as follows:

	Per Cent Tested	Per Cent Reactors
Yellow Medicine County	91.4	3.0
Chippewa County	90	2.2
Renville County	86.3	3.4
Lac quit Parle County	90	2.3
Average		2.7

In these same counties an average of 13.9 per cent of the children reacted to tuberculin from 1930 to 1934.

In all of the Mantoux surveys, all school personnel also were tested. The results of this are as follow:

Age Range	21 to 71 years
Total number tested	3,698
Number found to react	801
Number nonreactors	2,897
Percentage reactors	21.6

I believe, from experience, that most of the cases of pulmonary tuberculosis in the years to come will develop among the group of children who are reactors to tuberculin today. Therefore, I believe that not only control, but also eradication, of tuberculosis can be accomplished by the foregoing program. It is a matter of starting at the "grass roots" to eliminate tuberculosis. In other words, begin with the child to find the infection, then discover its source. Eliminate the fountain head of tubercle bacilli, either by controlling the disease or by hospitalization. Carefully watch the infected children; make roentgen ray film inspection of their chests annually as they approach and continue on into adulthood. If roentgen ray shadows appear, complete the examination for tuberculosis. A diagnosis is not made on a roentgen ray alone.

The weapons are now in our hands. They must be used with arduous work to eliminate tuberculosis. The main weapons are the Mantoux test, the roentgen ray and the field nurse and the family physician. No one of them is adequate. They must be used together to conquer tuberculosis. In areas where there is a low incidence of tuberculosis, I feel that the tuberculin testing program should always come first, the roentgen ray inspection of the chest then can be limited to the reactors rather than a mass roentgen ray program.

When a tuberculin reaction is present, two important facts are immediately established: (1) The individual is at least a potential case of clinical tuberculosis, (2)there has been a source of infection which may be sought and often found among the individual's adult contacts in daily life.

The simple fact that a person reacts to tuberculin, immediately arouse in him or her an intense interest in tuberculosis, and he or she desires information concerning the ultimate outcome of this infection. The logic of periodic examinations including roentgen ray film inspection of the chest come to be obvious to them and their cooperation is easily gained. On the other hand, if only roentgen ray film inspection is made as is practiced in mass roentgen ray surveys, and the findings are reported as normal, it is often exceedingly difficult to maintain that individual's interest in subsequent periodic examinations, which often may be indicated. A tuberculin reaction gives a definite hold on the individual and affords the knowledge that they have been infected. This knowledge alone in most cases assures one of full cooperation thereafter. It seems far more important to concentrate attention on the tuberculin reactors in whom potential clinical tuberculosis exists, than to devote time, energy and money to making roentgen ray inspections of the tremendously high number in whom there is no possibility of finding clinical tuberculosis. It is believed that tuberculosis in rural Minnesota can be eradicated by this method.

I feel that it would be a tragedy to introduce BCG in an area such as ours. To artificially establish sensitivity of the tissues of all of the citizens would be to destroy the most potent weapon—the tuberculin test. It must be remembered that in order to develop clinical tuberculosis, infection must

first occur. If one eliminates the sources of infection and carefully watches those few whose tuberculin tests show that they have been infected, there is every reason to believe that tuberculosis will be relegated to the same category as typhoid fever and smallpox in the entire state within the life span of the coming generation.

Riverside Sanatorium

DISCUSSION

Vern T. Bickel, M.D., Lamar: I would like to ask the impression of the sensitivity of the patch test. I run into some trouble with patients on this needle proposition.

J. R. Bridges, M.D., Kahoka: I would like to ask how many of these positive reactions were active tuberculosis. In my experience, many of the positive reactions to the patch test were not active.

Dr. Jordan: The patch test is far better than no test at all. I find it hard to control its use with school children. For the first several years, in work on about 16,000 children, a patch test was used on one arm and a Mantoux on the opposite arm of many. It was found that the Mantoux was more efficacious in picking out reactors by about 10 per cent than the patch test was. So we have quit using the patch test altogether and find no trouble at all using the Mantoux test when the educational facilities have been sufficient to see that the people understand what is being done.

In giving a Mantoux test one does not go through the skin; one only perforates the first layer of the skin. The children soon find out it does not hurt them, even when they have a positive reaction, any more than a mosquito bite. So I feel when one has full cooperation, it is far better to use the Mantoux. But if it is the choice of a patch test or nothing, always use the patch test.

Insofar as percentage of these children proving to be active cases of tubeculosis, it is low. Our percentage probably is about 2 per cent with suspicious shadows; but less than two tenths of 1 per cent of active disease in the child. When it comes to the adult reactor, we become more cautious and insist on a roentgen ray every year as a precautionary measure because it is these adults, in the positive group, that one finds may develop an active tuberculosis.

One must be on the alert for the delayed reactors to the Mantoux test. I think most of the literature recommends the Mantoux being read at forty-eight hours. We have stepped that up for years to seventy-two hours and here is the reason why: there is occasionally a person whose reaction is delayed for from seventy-two to ninety-six hours. These people usually have black hair, black eyes and dark skin.

Two years ago and four years ago we tested a school in which there was a boy of that type. At forty-eight hours the reading was negative. Last fall when we went back, he was a senior. He had lost some weight during the summer, had some cough that he thought was a cold. We tested him along with the rest of the football team. At forty-eight hours his test was negative. We did not have the opportunity to go back at seventy-two hours and read this group again but the coach called me in about four days and the boy then showed a positive reaction.

Teachers and coaches can read these reactions because they have been shown how in the years of working with them. We are not looking for erythema, but actually edema. We went back to see this boy and he had a definite positive reaction (plus two). He was roentgen rayed immediately and was found to have an active pulmonary tuberculosis, with a small cavitation and positive sputum.

Occasionally, school children have an adult type of destructive tuberculosis. The most important thing to remember is that a positive reaction picks out those to watch in the coming years.

PARENTS CAN IMPROVE HIGH SCHOOL ATHLETICS

Although most parents show enthusiasm for high school football, they seldom contribute much toward making this and other sports a powerful educational influence, says Fred V. Hein, Ph.D., Chicago, consultant on physical fitness for the Bureau of Health Education of the American Medical Association.

Writing in the current issue of *Hygeia*, Dr. Hein points out that parents are potentially the strongest force in determining school athletic policies.

"The coach's attitudes and practices are often a reflection of the community. The majority of high school coaches are sincere men, genuinely interested in the welfare of youth. Unfortunately coaches are sometimes hired primarily to win games, and they are told in no uncertain terms that their jobs depend on a winning record. Is it any wonder that the interests of the boy become secondary under these conditions?" he says.

It is a splendid thing to win, but victories must not be gained at the expense of the health of the players, Dr. Hein emphasizes.

"Most schools require a special medical examination of those who participate in vigorous sports. If such a policy is not followed in your community, it should immediately be put into force.

"When a player is injured, only a physician should decide as to his fitness to continue play. If a boy has been ill or had an injury that has kept him out of play for some time, a permit from a doctor should be secured before he returns to practice or competition."

Parents should make certain that schools supply the best equipment for contact sports, according to Dr. Hein.

"Purchases of athletic equipment are sometimes made with economy in mind at so-called bargain prices. There are no bargains worth jeopardizing the safety of any boy."

If players have not been properly conditioned, they are likely to be injured in early games, he indicates. In many states the athletic code requires at least three weeks of conditioning before the first game is played, with a suitable number of practice periods preceding the first contact scrimmage.

Teams from small schools should play teams representing institutions of similar size, he advised.

"The larger schools have more boys to draw from, and while it is possible that the first teams may be equal in ability, the boy representing the small school may find himself pitted against four or five fresh players in a game, each as capable as his predecessor. Under these conditions injuries are naturally more likely to take place," points out Dr. Hein.

When a high school team wins a conference championship, extra games scheduled to determine state or regional championships can be hazardous, he says.

"The number of games should be determined before the season starts according to sensible recommendations —about seven to nine games in football—and then held to regardless of pressure to go beyond a safe schedule for high school boys. The majority of high school athletes, in spite of mature size and appearance, are still immature."

COMMON PROCTOLOGIC CONDITIONS

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DISEASES OF THE anus and rectum are among the commonest maladies seen by physicians and the most frequent are hemorrhoids, fissures, ulcers, abscesses, fistulae, pruritus, adenomas and adenocarcinomas.

It is my hope today to present a somewhat new approach to this time old subject. In so doing, it is hoped that memories will be refreshed, that facts will be displayed for greater ease of remembrance and that practical points for everyday practice will be so treated as to gain the highest award possible for the physician listeners and readers to give—that of respect and remembrance.

The common diseases mentioned will be grouped as follow: (1) hemorrhoidal syndrome; (2) anal fissure, ulcer syndrome; (3) anoperianal abscess, fistula syndrome; (4) anoperianal dermatitis, pruritus syndrome, and (5) rectal adenoma, adenocarcinoma syndrome.

Syndrome is defined as a set of symptoms which occur together or the sum of signs of any morbid state.

These diseases have been grouped as syndromes in full recognition of the definition and in order to emphasize their rather regular progressive nature which will help in understanding and seeing these lesions in their typical forms and in the atypical or transition form from the early to the late.

The hemorrhoidal syndrome can be segmented into the three divisions of internal, external and combined interno-external.

Internal hemorrhoids should be considered as a progresssive vascular disease involving the terminal radicles of the superior hemorrhoidal veins. Varicosity of the three superior hemorrhoidal veins is the prime nature of this lesion. As the pathologic picture of varicose veins develops in the three cardinal internal hemorrhoidal zones known as the right anterior, right posterior and left lateral (or 2, 5 and 9 o'clock using the coccyx as 12 o'clock with the patient in the inverted or jacknife position) there is progressive "lumping up" or "matting together" of the varicosities until a varicose tumor is formed. Clinically, this progression is known as first degree, second degree and third degree internal hemorrhoids.

First degree internal hemorrhoids are diagnosable only by anoscopy as they cannot be seen at time of inspection and the varicose condition is soft and uninformative to the examining finger. When the endoscope is placed at the anal skin-rectal mucosal junction, a bluish-purple discoloration is seen. For quick determination as to what the normal color should be, the anoscope can be passed into the rectal ampulla and the salmon pink of the normal rectum studied. One will be amazed at how few times hemorrhoidal disease will be seen in conjunction with diseases of the rectal ampulla. Therefore, one can feel confident that if bluish-purple discoloration of the upper anal canal exists, the salmon pink of the rectal mucosa can be surmised to be normal. The comparison of colors is analogous to comparing the broken arm with the sound arm. In this early stage, there is no "lumping up" or varicose tumor formation and when the patient strains as if defecating, there is no rolling down of the tissue into the scope. Symptomatically, the patient complains of recent painless, bright red bleeding from the rectum with no notice of protrusions upon cleansing, or even having the sensation of protrusions.

Second degree internal hemorrhoids are diagnosed by their varicose tumor formation in the cardinal positions. On anoscopy, the tumors can be seen and there will be no doubt in the mind of the endoscopist as to the diagnosis. Upon having the patient strain down as if in the act of defecation, the tumors roll into the endoscope and will follow the withdrawal of the scope to the anal verge but will reduce themselves inside the anal canal upon complete removal of the endoscope. In this stage, the patient complains of intermittent bleeding and a feeling of protrusions from the rectum which he notices to disappear back into the anal canal.

Third degree internal hemorrhoids is the stage of complete protrusion of the varicose tumors outside the anal canal following defecation which the patient states he has to replace digitally. It is possible at time of examination that there will be no protruding masses from the anus and, therefore, part of the examining routine at time of inspection should be to have the patient strain down as if in the act of defecating. It often will be surprising the amount of tissue that can be expelled through the anal outlet. If palpation is done before the patient is asked to strain down, the third degree internal hemorrhoids may be so well replaced that straining at this stage will not bring the varicose tumors to the outside and, therefore, a correct clinical evaluation not be obtained.

External hemorrhoids like internal hemorrhoids is a progressive varicose involvement of the external hemorrhoidal venous plexus. In general, there are three stages with shading of one stage into the other as so frequently is seen in internal hemorrhoidal formation. First degree external hemorrhoids are visible as a bluish purple discoloration around the anal verge with definite elevation of the perianal skin. This gives the "engorged look" of this earliest phase. In my opinion. the varicose process in the external hemorrhoidal plexus follows the involvement of the internal plexus and can be explained via anastomosis of the

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Presented at the 90th Annual Session, Missouri State Medical Association, March 14-17, 1948, St. Louis.

two. I have seen less than a half dozen cases in fifteen years in which external hemorrhoids have been present and internal hemorrhoids absent. First degree external hemorrhoids are called by many "varicose external hemorrhoids."

Second degree external hemorrhoids, frequently called "external thrombotic hemorrhoids," represent the next stage and, as the name implies, are characterized by clotting. Whether the clot is inside or outside the vein has been argued and claimed to be proven by proponents of both, but it is a point of small clinical significance since the patient comes to the doctor in acute pain and asks his help in getting relief. In general, the clotting takes place anatomically at 2, 5 or 9 o'clock or immediately external to the internal hemorrhoid which already invariably has developed.

Third degree external hemorrhoids represent external thrombotic hemorrhoids which patients have allowed to recede without drainage or amputation and, microscopically, a tag of fibrous tissue is seen which gives the name "fibrotic external hemorrhoid." Like second degree internal hemorrhoids, these masses are generally located at 2, 5 and 9 o'clock for the reason given.

Combined hemorrhoids is the terminal stage of varicosity involving both the internal and external hemorrhoidal plexes. Clinically, symptoms are nonbleeding, protruding masses from the anus with digital replacement being necessary and still the patient notices "tabs," "lumps," "swellings" or "piles" present around the circumference after his internal masses have been reduced.

Treatment of hemorrhoids is still a controversial issue even after several thousand years of experience, observation and debate and certainly it is not in the compass of this paper to attempt to settle this issue. Each physican has his own clear cut views on what he has found best for his patients and himself, and I will give you my thoughts as briefly as possible.

First degree internal hemorrhoids are injected with 5 per cent phenol in vegetable oil mixture. Each cardinal zone is injected at one time with 5 cc. If this stops the bleeding of which the patient complained, he is asked to return in twenty-eight days, since it has been shown microscopically that this time elapses before mature fibrosis has taken place. If in twenty-eight days bluish discoloration is still present, a treatment identical to the first is advised. Rarely will a third injection at the end of eight weeks be necessary. In my opinion, multiple injections of first degree internal hemorrhoids is not scientifically warranted and I wonder if it is not being done because of empirical teaching.

Second and third degree internal hemorrhoids indicate surgery since the injection treatment fails to give a permanent fibrosis. When one thinks in terms of giving the patient lasting relief from this obnoxious condition, well done surgery has been the only recourse which has stood the test of time. Before passing from this topic, it should be mentioned that in patients who are poor surgical risks, as geriatric, excessive hypertensive, active tuberculosis, difficultly controlled diabetes, active or early latent chronic ulcerative colitis or amoebiasis, compromise and injection therapy is done with full explanation as to the possible limitation of the treatment.

The treatment of external hemorrhoids should follow the pattern of that for internal hemorrhoids but not until after decision is made regarding the internal hemorrhoids. Most times injection treatment of first degree internal hemorrhoids will cause a resolution of the first degree external hemorrhoids. External thrombotic hemorrhoids can be removed in the physician's office under local anesthesia or in the hospital at time of excision of the second or third degree internal hemorrhoids which are generally present. Factors of patient circumstances many times will be the determining point. Third degree external hemorrhoids should be excised at hemorrhoidectomy for the internal hemorrhoids or, if it happens to be a postoperative skin tag, it can be removed in the office under local anesthesia.

Combined hemorrhoids indicate hemorrhoidectomy.

Before discussion of the hemorrhoidal syndrome is passed, I want to give a few thoughts about "bleeding piles," "protruding piles" and "itching piles." These are the patients' classification and generally the patient with "bleeding piles" is either in first degree, third degree or combined stage and he should be examined before treatment is advised. Drug store diagnosis and routine suppository treatment of this patient is pure guess work. The "protruding pile" patient is generally in second degree, third degree or combined state and he likewise is entitled to inspection, palpation and endoscopy before an opinion for treatment is given. "Itching piles" are generally a complication of combined hemorrhoids and they are entitled to generous thought on the part of the doctor with his particular emphasis on cause and effect before treatment or surgery is advised. This will be discussed later under the pruritus syndrome.

The second commonest anorectal lesion is that of anoperianal fissure and ulcer and this is one of the most interesting anorectal syndromes that challenges the doctor.

Fissures and ulcers seem to have a specificity for occurrence in the posterior commissure but occasionally they occur in the anterior commissure and on rare instances in both. By and large, these lesions are caused by mechanical interference of the circular smooth muscle band which lies immediately under the anal skin—between the anal lining and the superficial lamella of the external anal sphincter muscle. Specific fissures and ulcers of tuberculosis, syphilis, chancroid, granuloma inguinale and epithelioma usually occur in some other portion of the anal circumference rather than the commissures. They are larger and at once are discernable from the smaller mechanical fissures and ulcers.

Fissure-ulcer has been considered as a syndrome because there is a progressive change from the early lesion of fissure to the late chronic stage of ulcer.

It is stated by many that fissures are curable by silver nitrate and other topical medicaments or by the subcutaneous injection of such chemical agents as quinine urea-hydrocholride and butyn. If most fissure cases are followed closely, recurrence generally will be found to be the rule and, finally, after repeated attempts at healing, the fissure becomes a definite ulcer and the smooth muscle band immediately under it becomes hyperplastic and hypertrophied and creates a mechanically obstructing bar to the downward flow of feces which makes cure practically impossible by any other method than surgical excision of the ulcer and incision of the smooth muscle "bar."

In general, medical treatment should be tried for anal fissure until it is proved that it will not prevent recurrence and then anal ulcerectomy should be advised. If the patient has an anal ulcer, the quicker surgical excision is performed the quicker the patient will regain his equilibrium.

The abscess-fistula syndrome includes all abscesses under the anal or perianal skin whether they are labeled subcutaneous, ischiorectal, ischioanal or what not. Regardless of the anatomic location, the hippocratic teaching of early incision and drainage should be followed. If there only were a second Hippocrates to now teach the second phase —that of "not packing abscess drainage incisions and fistulae," a good many mucus and fecal incontinent people would not be circulating the evils of anorectal surgery. After incision and "not packing the wound," abscesses will resolve and many times "play possum" and give both the patient and physician a false feeling of the site being healed. Later a second abscess will form and evacuate itself spontaneously out the first incision site but not uncommonly it burrows in another direction to create a second abscess site which might perforate spontaneously and drain or might require incision by the doctor. It seems wise to advise patients with abscess to allow their incisions to drain from three to seven days, then have anal fistulectomy. Enough of the concomitant cellulitis will have subsided by then to make postoperative events uneventful. When the condition is managed in this fashion, the internal orifice can be demonstrated more easily and if this is removed completely, recurrence will not be possible. Delayed fistulectomy adds the hazard of difficulty in locating the internal fistulous orifice for it usually seals off and remains undemonstrative until time of its recurrence, which is usually months later. The real essence of fistulectomy is total excision of the infected cryptic opening or internal orifice and, it is to be remembered, that not infrequently more than one crypt on the dentate line will become infected and lead to the one abscess and external fistulous orifice.

Salmon's or Goodsaul's rule for locating internal fistulous orifices is well to keep in mind, but methylene blue hydrogen peroxide mixture instilled into the external fistulous orifice is safer at the operating table. In spite of derogatory comments made by some regarding use of dye, it will cause less mistakes than depending on the eye to recognize the granulation tissue wall of a fistula.

Probing a draining orifice near the anus in an unanesthetized patient is one of the cruelest procedures a doctor can inflict on a patient because of the density of the sensory nerve endings in this area. The need of probing can be done away with by palpating induration leading toward the anus. If this is present, a fistula exists and the tract can be demonstrated at time of fistulectomy after anesthesia is complete.

A simple, usually overlooked and seldom used procedure which will verify an abscess having started in the anus or rectum is culturing of the pus from the abscess. If colon bacilli are found, there is little doubt as to the source of origin of the infection. This likewise, when done at initial abscess drainage, will do away with the necessity for using a probe to determine where the tract leads.

The dermatitis-pruritus ani syndrome is one of the most difficult to discuss because of the great amount of confusion and misinformation which exists. Most doctors, and most articles, go immediately to the question, "How do you treat pruritus ani?" The multitude of so-called cures speak for the inadequacy of medicines to heal the condition. The logical approach to this problem should be to seek out the cause for the dermatitis and prepare for its eradication. Secondly, the effect of the cause on the anoperianal skin should be determined. Is the skin only acutely involved and does it still have ability to restore itself to normal if the cause is removed or is the skin chronically and irreversibly damaged and does it lack restorative ability even if the cause is removed? This question should be answered in every case before treatment is instituted because the answer will lead to a more thorough therapeutic approach. If the skin is only acutely damaged, removal of the cause will suffice to bring about eradication of itch but, if the skin is lichenified chronically, then it will demand attention as well as removal of the cause.

Most cases of this sort begin as an acute dermatitis and usually progress to chronic dermatitis or pruritus. The patient attempts to use one of the multitudinous "cures" for his early dermatitis and finds it heals for a while. Later his itch recurs due to failure to remove the cause and after several episodes and trying many agents, he now finds his itch severe due to chronic skin damage. So the majority of cases presenting themselves demand attention for removal of the cause and treatment of the effect.

It is true that many things can cause pruritus ani, and they can roughly be divided into three groups. In order of frequency they are: (1) local, (2) allergic, (3) constitutional. The usual local causes are hemorrhoids, incomplete (blind) in-

ternal anal fistula which should be termed anal sinus, fungus infection, postoperative anorectal stenosis, anal papillomas and parasitic infestation. When examination reveals a moistness of the anal and perianal skin, hemorrhoids, anal sinus, fungus and postoperative stenosis should be thought of since moisture is associated with each and acts as the anoperianal skin irritant. Mucus is the moisture agent in hemorrhoids and stenosis, mucopus in anal sinus and lymph exudation in fungus infections, although lymph secretion from the subcutaneous lymph spaces occurs in all macerated pruritic cases as an associated factor. When the patient complains of itching and examination reveals a dry, nonlichenified skin, anal papillomas and parasites should be sought. Eggs, wheat, milk, sea foods, nuts and chocolate occasionally are found to be allergens for pruritus ani but in most of these cases, abdominal aching, diarrhea, urticaria or dermatitis are associated and aid in differential diagnosis. Local allergens are soap, medicated powders, toilet tissue and wool, and they sometimes will explain the etiology. General conditions of diabetes, uremia, cholesterolemia and jaundice will explain anoperianal itching but these seldom give perianal itching alone.

It is my opinion that the majority of acute and chronic anoperianal pruritic cases are complications of internal hemorrhoids, and I feel it should be listed as a complication of the hemorrhoidal syndrome. Practically all of these patients state that they have "itching piles," and I have reached the stage of agreeing with them. If the pruritus is acute and the hemorrhoids are first degree, then injection therapy plus skin hygiene will cure these cases. If the pruritus is acute but the internal hemorrhoids second degree or third degree, hemorrhoidectomy only will be necessary for permanent cure, but if the pruritus is chronic with skin thickening due to second degree or third degree internal hemorrhoids or combined hemorrhoids, then hemorrhoidectomy is done to remove the cause and alcohol injected subcutaneously under the remaining skin to treat the effect.

The rectal adenoma-adenocarcinoma syndrome is the most serious problem of all diseases in this region because of its life and death aspect.

If adenomas are found and surgically excised with adequate electrofulgration of the base, follow-up examinations seldom will reveal a recurrence. The seriousness regarding adenomas is in being sure that all adenomas are detected before surgery. In any case in which a rectal adenoma is palpated or detected by endoscopy, the patient is entitled to well done double contrast barium enema roentgenograms to rule out multiple polyposis.

Adenocarcinomas of the rectum are always grave, however, well done abdomino-perineal excisions accompanied by adequate preoperative measures of colonic decompression, chemotherapy and building up regime plus thorough postoperative care gives a brighter hue to this dark picture. Before plans for surgery are made, the doctor should have double contrast barium enema roentgenograms done to rule out multiple colonic malignancy.

A discussion of the surgical principles of abdomino-perineal proctectomy cannot be encompassed in a paper of this length, but the subject should not be dismissed without a plea being made to doctors to consider permanent colostomy in a more favorable light. Colostomy life, it is true, is not romantic, but it certainly is tolerable and today no well informed surgeon will dismiss a colostomy patient until he has been schooled in colostomy care and control. So a kind word from the patient's doctor toward colostomy life will give patients a more open minded viewpoint when the question of permanent colostomy is discussed by the patient and surgeon.

The common proctologic conditions mentioned, in the main, require surgery for permanent eradication and cure; yet a few words of caution are in order before corrective surgery is undertaken. All patients should have endoscopy first in order to eliminate the presence of: (1) latent chronic ulcerative rectocolitis, (2) latent amoebic proctitis, (3) adenomas, (4) adenocarcinoma. Anorectal surgery done in the presence of the first two might cause a violent exacerbation of diarrhea and not only endanger the patient's life but might give rise to delayed tissue healing should the patient survive the diarrheal episode. The wise operator is sure these lesions are under control before he attempts surgery. Adenomas and adenocarcinomas should be found before anorectal surgery for they are of far more consequence to the patient's life than hemorrhoids, ulcers, fistulas or pruritus. Adenomas can be removed at time of surgery for the common lesions, but adenocarcinoma detection contraindicates anorectal surgery because that zone will be sacrificed in the proctectomy that will have to be done for cancer removal. Too many cases are on record of patients having hemorrhoidectomy with recurrence of symptoms in one to three months and then a rectal carcinoma found. These catastrophies can be avoided by endoscopic study of the well washed rectal and colonic mucosa.

Anorectal surgery should be considered with caution in malarial, peptic ulcer and tuberculous patients. Many malarial chills will follow surgery even after an absence for many years. A malarial history should be obtained before surgery and the patient warned about exacerbation and preparation made for malarial rediagnosis and medical control. It has been my misfortune to have six patients have hemorrhage from peptic ulcers following hemorrhoidectomies and, while none died, it can be stated that the experience was trying for patient and doctor. No definite policy can be adopted and each case must be individualized, yet I feel anorectal surgery should be considered seriously before it is advised to a peptic ulcer patient. In primary tuberculous anal fistula, corrective surgery can be advised if the general condition of

the patient is good. If this condition does not exist, it should be delayed until it is brought about. In tuberculous fistulous patients who also have pulmonary involvement, fistulectomy is advised only in cases in which the healing index is positive in the lungs.

The operative technics have not been included because it is a voluminous subject and time and space limitation does not permit its presentation.

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OFFICE GYNECOLOGY

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IT IS IMPOSSIBLE in an address of twenty minutes to cover a subject that embraces as much as the title "Office Gynecology" implies.

Since perhaps 51 per cent of the patients in the average practice are females, and since most of those females will require one or another sort of gynecologic treatment, it is manifestly impossible to cover so broad a field in that time. Consequently, I have of necessity limited myself to one or two common symptom complexes which recur in office practice of gynecology and will attempt to say a few words about each of these. What I have to say is perhaps not new. It is simply a reiteration of some of the principles of gynecologic treatment that are more or less familiar to all but which one needs to have recalled occasionally.

I think one of the commonest symptoms presented by the female patient entering the office is that of vaginal discharge. I presume that perhaps 50 per cent of patients either will offer the information or will admit to vaginal discharge when the history is taken.

In the taking of the history of those patients with vaginal discharge an inquiry into the nature of the discharge and its time of origin, the nature of its onset and its physical characteristics often will be helpful in arriving at what one might call a prediagnostic suspicion as to the cause. The presence or absence of pruritus in connection with the discharge frequently will be of help in determining the etiology.

Among the common causes of vaginal discharge, if one excludes (and for the purpose of this address I will exclude) the gonococcus, is first and foremost I think the trichomonas vaginalis. Vaginitis caused by that organism is a condition which is common in every practice and which is I think today well recognized. The symptoms are well known.

The characteristic thin, foamy, yellowish-green discharge with a rather diffuse ecchymosis of the vaginal membrane and of the cervix, the rather intense pruritus of which the patient complains, are characteristic symptoms of this type of vaginal discharge. On gross examination one sees a diffuse erythema and a characteristic discharge with air bubbles in it and an accumulation of that discharge in the posterior vaginal fornix. Misroscopically, a hanging drop will demonstrate the presence of these little motile organisms in the discharge.

The treatment of trichomonas vaginalis vaginitis has gone through a considerable variation over the years. Today it has pretty well been narrowed down and standardized to two fundamental components of treatment. One is the acidification of the vagina, the maintenance of the normal acid pH of the vagina by one means or another; and, secondly, the use of a parasiticidal agent to assist in the eradication of the offending organisms.

It does not make too much difference, in my opinion, which of the various agents or drugs is used. There are a number of adequate and excellent preparations available. I think that the important thing is to adopt and to carry out a standard routine treatment which is successful for the individual physician.

The silver picrate stage has been gone through and various preparations have been advised. The sugars and various and sundry means of acidifying the vagina have been used. At the present time the method which one finds to be effective in the vast majority of cases consists in wiping the vagina dry, removing the accumulated discharge and insufflating the vagina with floraquin powder. In the matter of insufflation, a word of caution; there have been reported in the last few years several cases of air embolus as a result of insufflation of the vagina under pressure. The idea of trying to distend the vaginal mucosa has been discarded and the powder is simply blown in under slight pressure, not attempting to close off the vaginal introitus.

The patient then is given a supply of suppositories of floraquin to insert twice a day for a period of two weeks and advised that she take a douche not oftener than every fifth to sixth day. The use of vaginal douches not only in the treatment of trichomonas but in other conditions in gynecology as well is becoming less and less frequent. Physicians are beginning to believe that many infections are carried to the vagina by the douche. The use of the douche material is not too well regulated in the hands of many patients. Many patients are not careful of the cleanliness of the douche tip and I feel in many instances that infections owe their origin to the use of the douche. I am beginning to limit or discard entirely the use of vaginal douche

Presented at the 90th Annual Session of the Missouri State Medical Association, March 14-17, 1948, St. Louis.

in the treatment of trichomonas vaginalis.

When a douche is advised, white vinegar is used in the proportion of four tablespoons to two quarts of water and it is to be used at intervals of about five to six days if for no other reason than to provide a certain amount of comfort to the patient, who is uncomfortable from the accumulation of floraquin and vaginal discharge in the vagina.

Recently I have been supplanting the douche with an acid jelly which is now available commercially and which may be instilled into the vagina and which I have found satisfactory as a means of maintaining the pH of the vagina.

An additional objection to the douche, of course, is the fact that in using a vaginal douche the protective organisms which are present in the vagina and which serve as a bulwark against vaginal infections are washed out. If one washes out all of the bacilli and other protective organisms found in the vagina, one is defeating his own purpose and it seems, therefore, that the vaginal douche may not be quite so important and not quite such a good idea as in former years it was considered to be.

Moniliasis (or yeast mould infection) of the vagina produces a discharge which is again quite characteristic but entirely different from the discharge which one sees in trichomonas. In moniliasis the discharge is a thick caseous type of discharge which, in general appearance, is not at all unlike the appearance of a mucous membrane of the young infant with thrush. Since the two conditions are caused by essentially similar organisms, this is not surprising.

There is a thick caseous discharge and usually less erythema and there is considerable pruritus with moniliasis. In treating it, it has been found in recent years that the old treatment of aqueous gentian violet (from 3 to 5 per cent) has more to offer than perhaps any of the other means of treatment. There are available one or two preparations which I have found of some value, but I come back to gentian violet again and again, and painting the vaginal mucosa with gentian violet of from 3 to 5 per cent aqueous solution at intervals of three to four days is perhaps the quickest and most satisfactory way of eradicating the condition in the vagina.

Chronic cervicitis is a common cause of vaginal discharge and, if one eliminates the gonococcus, the most common cause of chronic cervicitis is trauma, and that trauma occurs most often at the time of labor or following early abortion. Backache, vaginal discharge of a nonspecific character usually without any pruritus are the characteristic symptoms in chronic cervicitis.

The treatment of chronic cervicitis basically amounts to an eradication of the infected glands of the cervix which are producing the secretion which is recognized as the vaginal discharge. Whether this is done by cautery or whether it is done by conization or whether it is done in severe cases by surgical means or Sturmdorf's operation is perhaps of little or no significance. The question is, what least stringent method of treatment will accomplish the desired results.

In some mild cases, cauterization is sufficient. When the extent of the cervicitis is greater, then conization is used. The Sturmdorf operation I have more or less discarded, finding that practically all cases will respond equally as well to conization with better end results.

The use of sulfa ointments in the vagina in the treatment of chronic cervicitis has been urged recently. I have not been too well satisfied with the results of such treatment. Perhaps I have not been sufficiently industrious in my use of them. Some men have reported good results.

The use of penicillin in the vagina has been suggested and has been reported successful in some instances. However, it is my feeling that for the most part, the mechanical treatment of chronic cervicitis, the removal of the infected glands is most often successful. The use of tampons and of antiseptics applied to the cervix by means of tampons has almost disappeared from gynecology.

A common condition which requires attention in gynecologic office practice is endocrine dysfunction. There are three basic principles, however, which must be kept in mind when one considers the therapeutic use of endocrine products in gynecology. The first of these is that all hormone therapy is substitution therapy and simply controls symptoms by remedying the existing deficiency.

The second is that every hormone acts on at least one susceptible definite organ in the body; and the third is that no hormone acts on the organ which produces it. If one keeps these three basic principles in mind, the use of the endocrine products in gynecology will be much more rational and much more effective. It might be well, also, to keep in mind that there must be present in the body an organ capable of response to the endocrine product used and that there must be evidence of a deficiency of that hormone in the patient. Otherwise endocrine therapy is irrational.

Now, what hormones are of value in gynecology? I had hoped that I might go over the full list of the hormones and indicate those which are and which are not of value. However, in the interest of saving time, I may dismiss one or two quickly.

Posterior lobe pituitary gland, pitocin and pitressin, are of value in certain circumstances, but usually not in office gynecology. The anterior lobe of the pituitary produces two hormones, the follicle stimulating hormone and the luteinizing hormone; these are unstable substances. The two portions, that is the follicle stimulating and the luteinizing hormones, have not been separated one from the other to date and for practical purposes, therefore, even though it should be a valuable product, the hormone is not available for practical purposes today.

Chorionic gonadotropin served as a substitute for this hormone and has been used under such names

as antuitrin, APL, and so on. It usually is derived from one of two sources. The first is pregnancy urine and, in connection with this source, the early enthusiasm for this preparation has not been entirely justified. Harm actually may be done by the use of chorionic gonadotropin as a result of overstimulation of the follicle. The equine chorionic gonadotropin which made its appearance first under the name of gonadogen and which was given a great deal of attention for a time as a means of stimulating ovulation in the female seems to be effective in animals, but its success in humans is considerably to be doubted. There may be a temporary overstimulation of the follicles produced by this particular hormone and it is well to point out that, so far as the work done to date indicates no woman who does not ovulate spontaneously can be made by the use of pregnant mare serum to do so.

Estrogen, the ovarian follicle hormone, is available either as natural estrogen under such commercial names as theelin and estrone and so on, or the artificial or synthetic estrogenic hormones, stilbestrol, hexestrol, dienestrol. These are extremely useful products. They are useful in a number of situations. Their primary usage, I think, is in the menopause. It is well to point out, though, that in using these hormones during menopause, there is only one portion of the menopause syndrome for which they are effective and that is the relief of the vasomotor symptoms; the hot flushes and the headaches are improved by the use of estrogenic hormones.

There is perhaps a certain amount of wellbeing, a certain amount of sedative effect produced but, essentially, the estrogen produces only an alleviation of the vasomotor symptoms present in the menopause and this point should be kept in mind. I say this because there probably have been many many thousands of milligrams of stilbestrol and hexestrol and dienestrol poured into patients in whom no possible results could be expected and in whom no results were obtained. The fact that a woman reaches the age of the menopause does not mean she needs estrogenic hormones and the fact that she has menopausal symptoms of one sort or another does not always mean that she will be benefited by the administration of estrogenic hormones.

In gonorrheal vulvovaginitis in children, the estrogens have proven of some value in producing a thickening or cornification in the vaginal mucosa. In senile vaginitis, in the form of ointments for local application, they have been particularly helpful as well as in the treatment of pruritus vulvae from other causes.

The suppression of lactation by means of estrogen all are probably familiar with. I find that the administration of relatively large doses of stilbestrol, 5 milligrams three times a day, will suppress lactation where it is desirable to do so. This is logical, too, I believe, since one knows that the secretion of the estrogenic hormone is at a low level at the time of the beginning of lactation. The balance between estrogen and progesterone at that time finds the estrogen on the low side and by giving relatively large doses of stilbestrol one is able to suppress lactation.

More recently the prevention of abortion and premature labor by means of the estrogenic hormones has been studied and some excellent results have been reported. This seemed rather paradoxical when it was originally suggested, since it had always been thought that estrogen had a tendency to stimulate uterine contraction and it seemed futile to give large doses of estrogen to a woman whose uterus was contracting and threatening to abort. However, it has been shown definitely that large doses (and some men have given up to 1,500 milligrams of stilbestrol in a twenty-four hour period) do not cause increased contractility of the uterus. Indeed, frequently a pregnancy which threatens to abort may be preserved by means of estrogen.

Progesterone, the corpus luteum hormone, may perhaps be of some use in the treatment of threatened abortion. I have come seriously to question its effectiveness in this condition. It may be of some help in the treatment of dysmenorrhea. One occasionally sees patients benefited by whatever relaxing effect upon the uterus progesterone may have. Again, since the administration of progesterone theoretically should assist in the formation of a secretory endomentrium, the use of progesterone may be of some help in certain instances of functional uterine bleeding. Recently I have been using estrogen in the treatment of functional uterine bleeding. Here, theoretically, it should be of no use, but I have found that by giving estrogen during the first part of the menstrual cycle, beginning at the onset of the period and continuing for the first two weeks of the cycle I apparently can stimulate the production of progestin by the patient's own ovary. In this way, perhaps one raises the progestin level and thus stimulates a secretory endometrium.

Testosterone is useful in uterine bleeding when all other means fail. I have yet to see a patient with functional uterine bleeding in whom the administration of 25 milligrams of testosterone every other day or every day for a period of three or four days would not eventually control the bleeding. It is of some help as a temporary measure in the treatment of dysmenorrhea. With it one may be able to suppress ovulation and control dysmenorrhea. Similarly it may be of some use in the treatment of endometriosis.

Thyroid substance, the old standby, without which I believe one would not be able to practice gynecology, is, of course, a valuable endocrine product. It is well to keep in mind, however, that there should be evidence of thyroid deficiency or at least of an ability on the part of the patient to tolerate thyroid substance before it is used. The basal

metabolic rate should be determined and the administration of thyroid substance without such a determination is to be decried.

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DISCUSSION

Vern T. Bickel, M.D., Lamar: I would like to know with what frequency one gets stenosis of the cervix after conization treatment.

Dr. Hardy: In conization of the cervix, one must be careful to see that the conization does not lead to stenosis. Whenever it is necessary to do an extensive conization, when one has extensive endocervicitis and it is necessary to take out a large cone, I insert a small rubber tube into the cervical canal and suture it in place and leave that tube in place until healing has advanced to the point where there is no longer danger of stenosis. There is perhaps no more common cause for stenosis of the cervix than the injudicious use of the cautery and of the electrocautery for conization. The important point in this matter is that the conization should not be more extensive than is necessary to remove the infected gland bearing area of the cervix and where the conization must, in order to accomplish this result, be extensive, some means must be used to prevent stenosis during the healing process. The simplest method is to put a little piece of rubber tube in the cervical canal and suture it in place and leave it there for approximately two weeks. There will then be no stenosis of the cervix.

H. L. Kerr, M.D., Crane: I would like to ask Dr. Hardy if he thinks progesterone would stimulate lactation.

Dr. Hardy: It has been said that progesterone will stimulate lactation. About three or four years ago I undertook the administration of progesterone to a number of patients who were desirous of nursing their infants and who apparently were not going to be able to do so. My impression was that the method afforded little advantage in improving lactation. I have more or less come to the conclusion that lactation, the ability of the mother to nurse her infant, is something which is predetermined before pregnancy begins. Perhaps I am a fatalist and perhaps I give up too easily, but I feel that the mother either will or will not be able to nurse her infant, depending upon what kind of glands she has and that it makes little or no difference what one does beyond providing an adequate diet. I have not been able to improve lactation with endocrine therapy.

PAPILLARY CYSTADENOMA LYMPHOMATOSUM

LEO H. POLLOCK, M.D., *Kansas City, Mo.*

Papillary cystadenoma lymphomatosum of the parotid gland is not a rare neoplasm. Yet it is odd that casual or no reference is made to it in many books on surgery and pathology. It should be considered in the differential diagnosis of any mass in the parotid area. The external appearances of the various tumors in this region are not pathognomonic. Therefore, the prognosis should be deferred until microscopic study is made.

I wish to add two cases to the infrequent reports on this lesion. The largest series, of twenty-two cases, is reported from the Memorial Hospital.[4] There are no characteristic, distinguishing features on external examination of papillary cystadenoma lymphomatosum. The growths have various characteristics of benignity such as slow growth, definite outline, encapsulation. They are painless and may be smooth or finely nodular. Generally, the mass is elastic or tense, resembling cellular mixed tumors; but it may be soft. Papillary cystadenoma lyphomatosum does not have the cartilagenous hardness and gross nodularity of the usual mixed tumor. It is slightly movable on the gland and not attached, nor does it cause changes in the overlying skin. The tumor is enveloped by a definite capsule. It is not vascular. The arterial supply is small and no lymphatic trunks are seen piercing the capsule. It cuts easily and contains fluid which may be chocolate colored, milky or clear. The cut surface reveals cysts ranging from 1 mm. to even 2 cm. in diameter, often giving a multiloculated or lobulated appearance. There may be small whitish nodules due to germinal centers in the stroma. The lining of the cysts has a soft velvety appearance due to papillary growths.

These also may be called papillary cystadenolymphoma. They have a characteristic histologic structure: There are cystic spaces dispersed in a stroma of lmyphadenoid tissue. The following general description fits in detail the two cases reported here. The epithelial structures are in the form of tubular glands, cysts and papillae. The lymphatic part contains germ centers and does not show the structural arrangement seen in lymph nodes. There is no differentiation into cortex and medulla, or between secondary follicles and interfollicular tissue. The lymphoid tissue may be scant or abundant and it may be partially or completely hyalinized. The large germinal centers indicate an active neoformation of lymphocytes.[3] The space between the glands and cysts is filled by lymphatic tissue, which also forms the cores of the papillae. The epithelium rests upon a thin membrane which seems to fuse with the argentaffin reticulum of the lymphatic stroma. It may form smooth cysts of various sizes, or may be thrown into intracystic projections varying from simple buds to complex branchings. The epithelium is characterized by two or three layers of stratified or pseudostratified columnar cells. The luminal cells may be tall and cylindrical. They have a well defined border. Beneath the columnar layer, there are from two to three layers of polygonal or

From the surgical services of the Menorah Hospital and the Alfred Benjamin Dispensary.

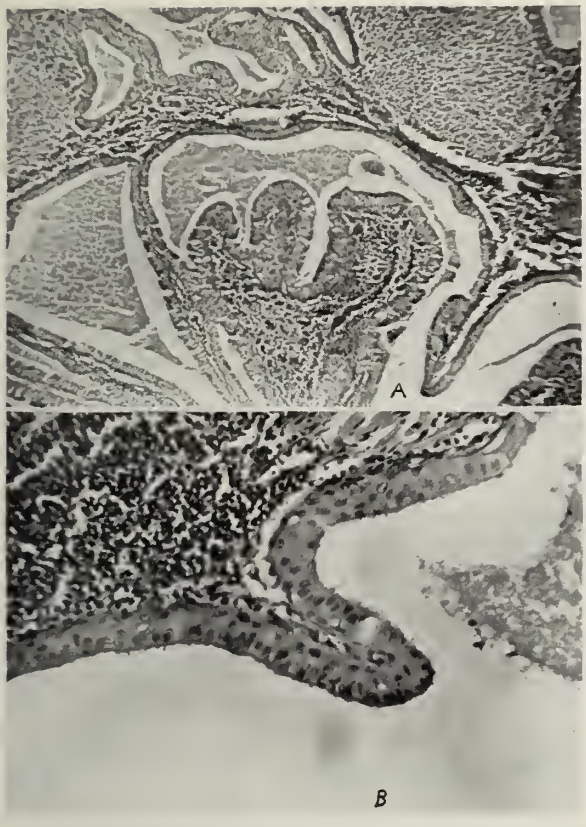


Fig. 1 A and B. Male, 64 years old, had a painless, slowly growing mass in front of the lobule of the right ear for four years. It was 3 cm. in diameter, finely nodular, elastic, slightly movable in the parotid gland and not attached to the skin. The pathologist, Dr. Robert Koritschoner, reported: the tumor is an encapsulated, spherical mass, 3 cm. in diameter. It is somewhat soft, light grayish red in color. On section, it is granular in appearance and has central liquefaction. It resembles a thyroid gland because of numerous small cysts, measuring 1 to 3 mm. in size, which contain grayish mucoid material. Examination shows the section to be composed of numerous cystic spaces, many of which are multilocular, containing pink stained material. Between them, there are strands and round areas of dark bluish stained tissue. With low magnification, these bluish areas correspond to lymphatic tissue with formations of lymph follicles. In many areas, this tissue forms the stroma for cystic and papillary growths which are covered with an epithelial layer. While the two elements seem in close contact, a fine basement membrane separates them. In many places, the epithelium is in two layers. The outer is high cylindrical, has dark, small nuclei at the luminal end of the cells, and shows some fine processes protruding into the lumen. The layer neighboring the lymphatic tissue shows cylindrical cells with a lighter stained and larger nucleus, with numerous vacuoles in the cytoplasm. The lumens formed by the epithelium contain a structureless pink stained material in which many vacuoles are visible. The vacuoles are small and often contain in the center a small nucleus which is stained red and is apparently necrotic. The contents of the cyst, therefore, appear to be necrotic desquamated epithelial cells rather than a secretion.

cuboidal cells with lightly staining nuclei and less cytoplasm. There are no squamous cell types. While a few authors report seeing cilia,[6,7] the majority deny their presence.[4] In my cases, there are many small projections on the luminal borders of the cells. One cannot say whether these are precipitated debris or cilia. The uppermost columnar cells have eosinophilic cytoplasm of pale and finely granular structure. The nuclei, which may be deeply staining, usually are situated at the outer edge of the cells. However, this is not a constant position. Sometimes, the nuclei are large and may be either spherical or ovoid in shape. The cysts and lymphoid tissue essentially form a constant histologic picture; there is no reason to believe that one has invaded the other.

The most common location of the tumors is in the midportion of the parotid just in front of the lobule of the ear. Sometimes they occur at the border, especially in the tail of the gland which is just behind and a little below the angle of the jaw. Seldom are they found in the upper neck where they may be mistaken for thyroid adenomas. The anteroinferior aspect of the tail of the parotid osculates the posterior superior portion of the submaxillary salivary gland, but is separated from it by the deep cervical fascia. The tumor erroneously may be thought to be in the submaxillary gland. Warthin found two cases among 700 mixed tumors of the parotid and among 500 branchial cysts of cervical origin.[7] At the Lahey Clinic,[5] of 150 cases of parotid and submaxillary tumors, five adenolymphomatosum are mentioned. In the Memorial Hospital report,[4] 359 parotid tumors were examined from 1932 to 1944. Of these, 206 were benign and 163 were malignant. Twenty-two were papillary cystadenoma lymphomatosum, comprising 10 per cent of benign tumors, 6 per cent of all parotid tumors and less than 2 per cent of all neoplasms of the head and neck. Suffice it to say that the two reported cases at the Menorah Hospital were the only ones seen in thirteen years of various surgical cases. Papillary cystadenoma lymphomatosum occurs most often in middle aged and elderly males. They have been observed in ages from 2½ to 92 years. The incidence in males to females is about ten to one. Yet, the general incidence of salivary gland tumors is about equal between the two sexes. Papillary cystadenoma lymphomatosum occurs as frequently in one side as the other. They are rarely bilateral and may even form multiple masses in one gland. They have varied relationships with the parotid, but lie under the deep fascia which forms the parotid fascia. In a third of the cases, they are superficial, but attached to the parotid capsule. They may lie within the gland at various depths. In a few instances, the tumors are located so deep that it is necessary to elevate the tail of the gland to expose it. The large ones may extend almost to the lateral wall of the pharynx and beneath the sternomastoid muscle. They are always movable except when in the retromandibular portion. When there, the tumor is compressed between the posterior edge of the ascending ramus and mastoid so that there will be only a diffuse ill defined fullness of the parotid area due to the expansion of the deep lying tumor.

The other growths which occur in the region of the parotid gland, and must be differentiated from papillary cystadenoma lymphomatosum are benign, cystic or cellular mixed tumors, malignant mixed tumors, adenocarcinoma, branchiogenic cyst, metastatic carcinoma, adenitis, lymphosarcoma, Hodgkin's disease, sebaceous cyst, parotitis and others.

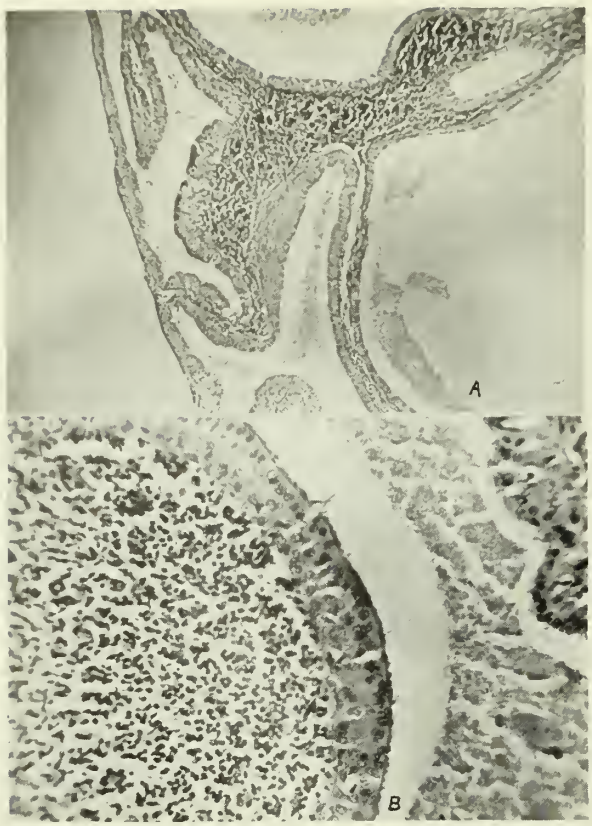


Fig. 2 A and B. Patient of Dr. Paul Lux. Male, 53 years old, had noted a slowly growing mass over the angle of the right jaw for three years. It was 2.5 cm. in diameter, smooth, tense, painless and slightly movable. The pathologist, Dr. Robert Koritschoner, reported: Reexamination of the sections shows them to resemble closely those of case shown in figure 1. They have the same histologic structure. However, the cystic structures are somewhat larger and more closely packed. In many areas, the basement membrane of the pseudostratified columnar epithelium, lining adjoining cysts, are separated by only a few lymphoid cells. The lymphoid stroma is not as closely packed as in the other specimen. The luminal borders of the epithelial cells in many places have fine projections. These may be cilia or precipitated material.

The diagnosis is best made after surgical excision. At the Memorial Hospital, aspiration biopsy was done in eighteen cases. In twelve, the correct conclusions were obtained. A positive report, in nine, was based on paraffin section of an aspirated plug of tissue. A smear of aspirated material is less reliable, due largely to lymphocytic character of the tumor, so it is impossible to differentiate it from normal lymph nodes, malignant lymphomas, chronic adenitis and Mikulicz' disease. The tumor must be removed completely. They tend to recur promptly after incomplete excision. However, it is not necessary to remove more than a thin rim of surrounding normal parotid gland. The incision may be made over the mass parallel to the facial nerve. When the tumor is in the retromandibular portion, the incision may extend from the retroauricular fold down along the anterior border of the sternomastoid muscle. The parotid is lifted carefully from the mastoid until the main portion of the seventh nerve is exposed. The dissection may then proceed to the tumor to minimize inadvertent injury to the nerve. There is no certain evidence that they may become malignant.[4] When the diagnosis is established as papillary cystadenoma lymphomatosum, and the tumor has been removed completely, the prognosis may be given with certainty that there will not be any recurrence or malignant changes. On the other hand, many mixed tumors do not have this favorable outlook. Radiation was not used in the Memorial Hospital series because surgery gave such good results.

There are many theories about the origin of papillary cystadenoma lympomatosum. They closely resemble branchial cleft cysts except the latter have stratified squamous epithelial lining. The walls often are thickened to 1 cm. or more due to lymphoid hyperplasia. The subepithelial layer of lymphadenoid tissue also has germinal centers. While many are papillomatous, they do not have such a degree of intracystic papilliferous growths.[7] The proponents of the branchiogenic theory believe the tumor arises from the entodermal portion of a branchiogenic arch. Warthin believed "it represented either the upper respiratory tract or eustachian tube. The mucosa is precisely like part of eustachian tube which has tall stratified ciliated columnar epithelium with many lymphoid follicles below the epithelium." He had seen a polypoid tumor of the eustachian tube which was identical with papillary cystadenoma lymphomatosum but had no cyst wall. He felt that the lymphoid tissue is an essential part of the misplaced auditory tube mucosa of the cartilagenous part and not a lymph node into which epithelial elements are misplaced. It is Ewing's opinion that the tumor arises from the entodermal portion of a branchiogenic cleft.[1]

Jaffe[3] postulated that "the epithelial lining is morphologically identical with a type of cell which develops physiologically in the salivary glands with progressing age, called 'onkocytes.' In the tumors, the onkocytes display marked secretory activity, with the formation of intercellular secretion capillaries. This leads to the formation of small cysts. The lympatic tissue is not an essential part of the tumor, but apparently the remnant of a lymph node. It is logical to assume the tumors develop from misplaced islands of glandular tissue in the lymph nodes about the salivary glands."

I feel that papillary cystadenoma lymphomatosum arises from displaced portions of the auditory tube. The epithelial lining of the cysts is similar to the lining of the latter while both have subepithelial lymphoid tissue. The mucous membrane of the eustachian tube in the adult is, for the most part, of the pseudostratified ciliated columnar variety.[2] The roof of the tube has a more cuboidal and nonciliated epithelium while the floor and side are definitely ciliated columnar. Numerous goblet cells occur near the pharyngeal orifice.[8] Large numbers may be present in some people and in others, only a few. The epithelial cells lie on a basement membrane. Beneath this lies the lymphoid layer which varies in different portions of the tube and with the

age of the patient. In normal ears of all ages groups, lymphoid nodules may be found in all parts of the tube either in the tunica propria or on the surface of the epithelium.[2] In the two cases reported here, one cannot identify the small projections on the surface epithelium. They may be cilia or precipitated mucus.

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GASTROJEJUNAL ULCER AFTER SUBTOTAL GASTRECTOMY FOR DUODENAL ULCER

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THIS CASE IS presented because of unusual technical difficulties associated with the operative treatment of peptic ulcer following high gastric resection and also for the purpose of discussing some of the varied views in the literature on the benefits to be derived and the extent of primary gastric resection to be done for duodenal ulcer.

Heuer,[6] in his monograph, "The Treatment of Peptic Ulcer," a study based on ten years of compiled data from the New York Hospital, shows the trend away from the conservative and toward the radical treatment of peptic ulcer. The librarian at the hospital collected 12,306 reports of peptic ulcer from the foreign literature between 1935 and 1942 treated by gastric resection and only 5,715 cases of peptic ulcer treated by gastroenterostomy or other conservative procedures. The average mortality for resection was 6.8 per cent and the average for gastroenterostomy was 5.7 per cent. It is evident, therefore, that the mortality of the more radical resection is approaching that of less radical gastroenterostomy.

In 2,558 cases of gastric resection by sixteen authors the results reported as satisfactory varied between 72 and 96 per cent with an average of 86 per cent. In 2,108 cases of duodenal ulcer treated by conservative operations presented by twelve authors, the average satisfactory results for a long term period were 63.9 per cent, which would seem to contrast unfavorably with the 86 per cent satisfactory results given for the more radical procedure.

There is a paucity of material dealing with the problem of ulcer recurring after resection. In Heuer's personal statistics there were forty-five patients who were subjected to secondary operations following poor results from the primary operation. He came to the conclusion that in patients with unsatisfactory results the dismantling of the gastroenterostomy and the restoration of upper gastrointestinal tract to normal has little to offer. According to Heuer, gastric resection is the procedure of choice when gastroenterostomy or other conservative operation fails.

Certain problems arose, however, in the cases with unsatisfactory results following resection; Heuer had eight instances of unsatisfactory results after resection. In four of these a subsequent resection yielded good results but, as Heuer says, "A real difficulty arises when in the presence of an unsatisfactory result there is little if any stomach to resect."

On reviewing their group studies on gastric acidity following gastric resection Heuer reports there was in general a reduction in acid secretion in proportion to the extent of resection, but extensive resection did not insure achlorhydria and when the clinical results were compared with the acidity obtained there was a lack of correlation. For example, in a group of patients who had a minimal resection, 90 per cent had satisfactory results while only 25 per cent had a reduction in acidity; but in eleven patients with major resections, an anacidity resulted in eight, acid below normal in two and no change in acidity in one. Heuer presents his opinion on resection in the following words: "in estimating the results of gastroenterostomy and gastric resection it has repeatedly been claimed that the great virtue of resection is that it protects the patient against recurrent ulceration and, therefore, against marginal ulcer, hemorrhage and perforation. The literature and our experience indicate that the incidence of recurrent ulceration and its attendant complications is lower following gastric resection than following gastroenterostomy. But it is evident that the protection is relative, not absolute. Recurrent ulceration, hemorrhage and perforation have occurred in our patients with gastric resection, particularly in those with duodenal ulcer. It would appear of doubtful value to pursue the idea of insuring achlorhydria and, therefore, better results by larger and larger resections. It may be bet-

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ter to accept the limitations of resection as a treatment of ulcer and adopt an operation of lesser magnitude which insures fairly satisfactory results with a reasonable mortality and permits further surgery if recurrence takes place."

With respect to the extent of gastric resection for duodenal ulcer, Hunt[9] believed that an amount of stomach should be resected which would reduce the preoperative degree of acidity approximately one half. Accordingly, he limited resection in duodenal ulcer to the pyloric half of the stomach including the lesser curvature angle of the stomach and, usually, the acid bearing portion of the duodenum. He resected higher only in cases in which the preoperative acids exceeded 100. Hunt did not feel that resections of from 75 to 80 per cent of the gastric structure were justified. Sanders[17] recommends removal of from 50 to 60 per cent (two thirds). Lahey and Marshall[11] reporting on the complications of 152 consecutive patients who had subtotal gastric resections for duodenal ulcers found five cases of gastrojejunal ulcer after high gastrectomy. They advocate antecolic anastomosis of the Hoffmeister type without enteroenterostomy, using long antecolic loops and antecolic position because of the ease with which recurrent gastrojejunal ulcer can be managed. Marshall[14] recommends resection of from two thirds to three fourths of the stomach in order to remove a considerable segment of the acid secreting mucosa.

Wangensteen and Lannin[20] advocated extensive removal of gastric tissue (three quarter) resection as necessary to insure achlorhydria. Merendia et al[15] noted that extensive gastric resections (75 per cent) in dogs, when accompanied by long afferent duodenojejunal loops, were followed by a high incidence of gastrojejunal ulcer. Forbes[4] says that theoretically at least 80 per cent of the stomach should be removed. Wangensteen[19] lists the failures after gastric resection for ulcer as: (1) inadequate resection (three quarter), (2) long afferent jejunal loop, (3) leaving antral mucosa, (4) failure to resect entire lesser curvature.

Holman and Chenoweth[8] noted a mortality of from 20 to 25 per cent for secondary resections, which is the operation they prefer rather than excision of the ulcer and revision of the stoma. They believe, however, conservative treatment should be given a fair trial. Fridell et al[5] states that a reduction in gastric acidity occurs in 75 per cent of gastric resections performed for primary duodenal ulcer. The histamine test was used as an index to the amount of gastric structure to be removed. Enloe[2] resects at least one half of the stomach and Hunt[10] urged the adoption of a more accurate system for recording the amount of stomach removed. He felt that those who advocate removal of three quarters or more are in error.

In cases in which jejunal ulcer develops after extensive subtotal resection, Uihlen and Walters[18] find that the best results are obtained by removal of additional stomach with establishment of polya type of anastomosis. Church and Hinton believe inadequate resection is the most common cause of marginal ulcer. The incidence of marginal ulcers reported in the literature varies considerably. According to Lewisohn[12] it is 30 per cent; Hunt gave 5 per cent; Hinton and Maier[7] 6.4 per cent. Mage[13] in forty failures after operation found six occurring after the fifth year and one as late as the twelfth year. He cautions against conclusions drawn on the basis of three and five year "cures." According to Eusterman and Balfour[3] the complications of recurrent ulcer are more difficult to deal with than those accompanying primary ulcer. They recommend preliminary jejunostomy for feeding in recurrences associated with inflammatory perforating processes, thus permitting the stomach to be put at rest preliminary to a second stage resection. In cases in which the recurrence follows the Billroth II procedure, they like to avoid the use again of the jejunum and attempt when possible to restore the gastrointestinal continuity by anastomosing the duodenum to the remnant of the fundus. Weir[22] in twenty-nine cases of recurrent ulcer following partial gastrectomy found achlorhydria in 20 per cent. In 40 per cent gastric acids were definitely reduced and in 10 per cent a high acidity was noted.

The success of any type of surgical approach to the cure of duodenal ulcer lies in the relative completeness with which four important functional factors are controlled: namely, hypermotility, hypersecretion, pylorspasm and hyperacidity. The greater advantage of resection over pyloroplasty and gastroenterostomy no doubt is due to its superiority in controlling these factors. Vagotomy, on the basis of present reports, seems to offer reasonably good results with low mortality. It is probably too early to forecast late results. There are undoubtedly a number of patients such as the one whose case record is reviewed who have a marked ulcer diathesis and who have the misfortune to develop marginal ulcer after high gastric resection. Vagal neurectomy as the primary procedure may ultimately prove a boon to these unfortunate individuals. Further resection with or without vagotomy would seem to be the procedure of choice.



Fig. 1. Gastrojejunal ulcer and constricted stoma.

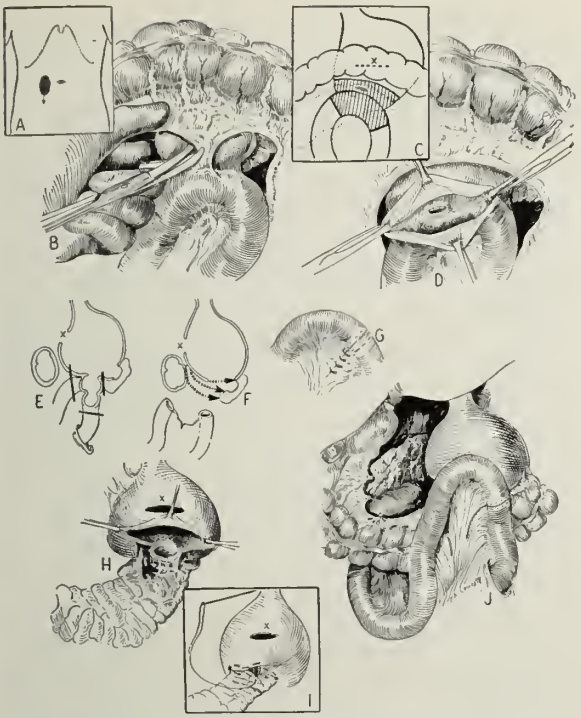


Fig. 2. Operative procedure: A. Site of pain and direction of its radiation. B. Transverse mesocolon freed from margins of gastrojejunostomy stoma. C. Schematic shaded area shows extent of stomach and jejunum resected. (X) exploratory gastrotomy in anterior wall of stomach. D. Jejunum opened, callused ulcer 2 cm. penetrating onto pancreas. E and F. Schematic-maneuver of disconnecting jejunum and closing stomach wall, (X) anterior gastrotomy, G. Jejunojejunostomy. H and I. Details of steps shown in E and F after method of Niessen for closure of duodenal stump. J. Antecolic, anterior gastrojejunostomy, utilizing anterior gastrotomy.

REPORT OF CASE

The patient, a male, aged 46, weighing approximately 135 pounds, had his first ulcer symptoms in 1918 with pain in the right epigastrium. At that time bismuth and a soft diet were prescribed. In 1924 a roentgen ray revealed a duodenal ulcer. A posterior gastroenterostomy was performed elsewhere and, from this, he had relief until 1938 when there was a recurrence of pain which shifted to the left epigastrium. He was placed on an ulcer diet again, but shortly after had a sudden large hemorrhage. The red cell count dropped to 1,750,000 and the hemoglobin to 4.2 gm. He was given repeated transfusions and gradually improved. The pain, however, persisted and a roentgen ray taken later revealed a marginal ulcer at the gastroenterostomy stoma. In 1939 the gastroenterostomy was dismantled, the marginal ulcer excised and the jejunum closed with restoration of the normal gastrointestinal continuity. Six months later (1940) pain again recurred. This time in the right epigastrium and in the back. The pain was severe. The patient submitted to a third laparotomy and an ulcer of the posterior wall of the duodenum was found to be perforating onto the pancreas. His surgeon performed a gastric resection with a posterior polya anastomosis. The gastric acids, subsequently, were 18 degrees of free hydrochloric. From 1940 to 1944 he did fairly well except that intermittently he complained of pain in the right subcostal region with radiation to the back. He was also tender to deep palpation over the gallbladder region. During this time he was on an ulcer diet, antispasmodics and antiacids. He insisted that his symptoms were somewhat different than previously. A roentgen ray of his gallbladder was made and gall stones were noted. The gallbladder was explored and removed in November 1944. It was found to contain multiple stones. The common duct was apparently normal as was the head of the pancreas. While convalescing the patient noticed blood in the stools and several occult blood tests were strongly positive. The blood count was taken repeatedly, but there was no significant alteration from the admission level of 5,000,000 erythrocytes and 98 per cent hemoglobin. After a few days the stools became negative for occult blood. The convalescence was otherwise uneventful and the patient was discharged from the hospital after eighteen days.

For a few months he was apparently well and then had a recurrence of intermittent pain, this time in the left hypogastrium radiating downward toward the right lower quadrant. The pains were excruciating, causing the patient to double up, and were not controlled by either diet or drugs except morphia. In March 1945 a barium meal was given and the roentgenologist reported a niche 1 cm. in diameter just above the stoma on the right side of the gastroenterostomy (fig. 1).

Reexamination in June 1945, after the patient had been on an intensive medical regime for two months, showed the ulcer still present. The patient returned to the hospital on June 20, 1945. On this admission his hemoglobin was 90 per cent, red blood cells 5,060,000, white blood cell count 11,000 with a normal differential, Kahn negative; urine, normal; and a blood pressure of 126 systolic and 84 diastolic. Physical examination was essentially normal except for his previous operative scars and marked tenderness in the right epigastrium. There were no masses.

He was operated on for the fifth time June 20, 1945. A posterior wall ulcer on the gastric side of the stoma was found. It was approximately 2 cm. in diameter and was penetrating onto the anterior surface of the pancreas. The technical procedure is shown in figure 2 and consisted primarily of an excision of the stomach and jejunum about the anastomosis. The base of the ulcer was left in situ. This was necessitated because the ulcer was callused, indurated and densely adherent to the pancreas. The continuity of the divided jejunum was reestablished by and end to and anastomosis and the opening in the posterior stomach wall was closed by suturing the anterior margin of the stomach wound by successive stages over the base of the ulcer in the pancreas, after the method suggested by Nissen[16] for dealing with the duodenal stump when the ordinary over the clamp inversion is not possible. Following this step the operation was concluded by making a new anastomosis, side to side, between jejunum and fundic pouch placing it antecolic and on the anterior wall using a gastrotomy incision made early in the operation for exploratory purposes.

The patient had an uneventful convalescence and has remained completely free of symptoms for more than



Fig. 3. Roentgen-ray of stomach two years postoperatively, no recurrence of marginal ulcer; satisfactory functioning gastrojejunal stoma.

two years. Roentgen ray of the remnant of the stomach after two years shows no recurrence of the ulcer. The stoma was functioning satisfactorily (fig. 3).

COMMENT

Weinstein and Colp[21] reporting on the effects of bilateral supradiaphragmatic vagotomy in gastrojejunal ulcer in ten patients who were recalcitrant to medical treatment, stated that results were favorable in eight cases (done in 1947). They were not prepared to draw conclusions except to state that pain had been alleviated.

It is possible that a combination of both procedures, resection and vagotomy, will prove to be the operation of choice, although in some cases the technical details may appear too formidable. In the case reported the large gastric ulcer on the stomach side of the anastomosis penetrating into the pancreas combined with extensive adhesions from previous operations seemed to preclude assumption of the additional risk. The results so far have proved gratifying.

SUMMARY

A case of gastrojejunal ulcer in a patient who had been subjected to three previous operations on the stomach, namely, (1) gastroenterostomy, (2) disconnection of gastroenterostomy and restoration of normal gastrointestinal continuity and, (3) high gastric resection, is reported and discussed.

The ulcer, which was penetrating onto the pancreas from the posterior gastrojejunal margin, was treated by further resection of the stomach and an antecolic gastrojejunostomy.

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AUREOMYCIN VALUABLE FOR EYE INFECTIONS

Aureomycin, one of the newer antibiotic drugs, produces excellent results against several kinds of conjunctivitis, the most common type of eye infection, say two New York physicians.

Writing in the October 9 issue of *The Journal of the American Medical Association,* Alson E. Braley, M.D., and Murray Sanders, M.D., of the Departments of Ophthalmology and Bacteriology, Columbia University College of Physicians and Surgeons, New York, describe the use of aureomycin for eye diseases on 100 patients.

The physicians applied aureomycin in solution to the eyes of all these patients. In a few cases they also gave injections of the drug.

Ninety-six of the patients had conjunctivitis, and results of treatment with aureomycin in most of these cases were excellent.

Aureomycin is also effective against some eye ulcers, the physicians found. The drug irritated the eyes of patients "only occasionally" and apparently produced no allergies or toxic effects, they say.

POST PUBLISHES ARTICLE ON THE COUNTRY DOCTOR

A number of states are trying to solve the rural-doctor shortage through scholarship loans to finance the medical education of local boys who will promise to spend a specified number of years in rural practice in these states, Steven M. Spencer says in an interesting article in the October 9 issue of the *Saturday Evening Post.*

Kentucky and Illinois have such funds and Indiana, Mississippi, North Carolina and Virginia have plans for them.

Mr. Spencer, associate editor of the *Post* who won the George Westinghouse Science Writing Award in 1947, describes the career of Dr. Chester U. Callan, of Rotan, Texas, who built his own hospital and maintains it with the help of two partners, Doctors Robert T. Wilkinson and J. Frank Johnson.

"Not enough young men share Doctor Callan's taste for rural practice," Mr. Spencer says in explaining the shortage of country doctors. "To most of them the comfortable roominess and friendliness of the farm and small town cannot match the dollar appeal and the alleged cultural advantages of the crowded cities. . . . As a result of this, many a village doc is growing old and tired, with no one coming down the pike to whom he can sell his practice."

The Callan hospital and others like it have proved that such institutions boost the level of rural health, according to the *Post* article.

SURGERY OF THE SPLEEN

WITH REPORT OF FOURTEEN CASES OF SPLENECTOMY

GEORGE N. JOHNSON, M.D., *Kansas City, Mo.*

THE RATHER DEFINITE indications for splenectomy[2] have been evolved mainly through clinical experience rather than through physiologic or pathologic knowledge of the spleen for actually little is known about splenic functions and information gained by pathologic studies of the organ has been slight. Splenectomy has been advised in: (1) trauma with massive hemorrhage, (2) hemolytic icterus, (3) hemorrhagic purpura, (4) occasionally in operations on the stomach and pancreas, (5) splenic anemia, or Banti's disease, and (6) in the surgical treatment of portal hypertension.

Contrary to the opinion of the average practitioner, surgery of the spleen is not uncommon. In the average 500 bed general hospital ten cases of splenectomy are performed each year, the majority being for traumatic injuries of the spleen. During the eight months covered by this report, January 1946 to July 1947, fourteen cases of splenectomy were performed at the Kansas City General Hospital. A study of these cases is the basis of this report. They are divided as follow: (1) traumatic rupture of the spleen associated with fracture of left ribs (four cases); (2) traumatic rupture of the spleen without any other injuries (four cases); (3) delayed traumatic rupture of the spleen (two cases); (4) stab wounds of the spleen (two cases); (5) Banti's disease (one case), and (6) congenital hemolytic icterus (one case).

It will be noted that the majority of the splenectomies reported were for traumatic injuries of the spleen. With the present increase in motor car accidents it is highly important to keep in mind that abdominal injuries are becoming more frequent and the traumatic laceration of the spleen is a growing problem. One always must be on the alert to diagnose and treat splenic injuries early. The mortality rate increases rapidly when operation is delayed.

In traumatic rupture of the spleen there is usually a history of trauma to the abdomen, left flank or left chest. As a rule the trauma is sudden and severe. Many such injuries have followed apparently trivial accidents. Because of the splenic fixation under the diaphragm, its close proximity to the ribs and its friable consistency, it is particularly susceptible to injury. This is illustrated clearly by the fact that nearly one third of all abdominal visceral injuries involve the spleen.

The symptomatology of traumatic rupture of the spleen is chiefly that of internal hemorrhage. A rapid, thready pulse, low blood pressure, cold clammy skin, subnormal temperature, air hunger and apprehension are late symptoms of hemorrhage and, when present, greatly lessen the opportunity for recovery. It is inadvisable to wait for flank dulness to occur before making a diagnosis of ruptured spleen for this is a late manifestation of advanced bleeding.

It is essential that patients with traumatic rupture of the spleen be diagnosed early. If the patient is allowed to remain in impending shock and then operated upon, the mortality rate is increased because of delay in controlling the severe loss of blood. One must not be deceived by assuming that fractures of the left lower ribs account for the abdominal pain in the left upper quadrant for it is common for traumatic rupture of the spleen to be associated with rib fractures in the left lower rib cage. Thirty per cent of the cases reported had associated fractures of the left lower ribs.

The period of symptomatic silence during the early hours or days of internal hemorrhage often gives a false sense of security and encourages a delay in surgery. The characteristic minimal drop in hemoglobin and erythrocytes gives further false assurance. If surgery is delayed until the symptoms of shock develop and immediate surgery becomes imperative, the risk is great.[3, 4]

The earliest symptom of ruptured spleen is pain. It may be severe or dull or of gradually increasing intensity. It may be localized to the left upper abdomen or flank; it not infrequently may be generalized over the left abdomen or, occasionally, may be distributed over the entire abdomen. Radiation of the pain to the left shoulder is emphasized by many observers. In my experience this symptom was a constant finding in ten of the twelve cases of traumatic injury. As a rule the pain occurred within one hour of injury. This symptom is a great help in diagnosing splenic trauma associated with diaphragmatic irritation. Rigidity of the rectus muscles and flank dulness were noted in a high percentage of cases.

External evidences of body damage may or may not be present. Absence of external evidence of injury should not influence the careful evaluation of the possibility of splenic injury. Not infrequently, associated injuries, such as fractures of the lower left ribs, mask the clinical picture and make the diagnosis of splenic injury more difficult.

It will be noted from the classification given that there were eight cases of traumatic rupture of the spleen. The ages of the patients ranged from 4 to 25 years. There were six males and two females. Fifty per cent of the cases had associated injuries such as fractured ribs of the left thorax, fractured pelvis and laceration of the liver and pancreas. All cases were involved in automobile accidents and were admitted to the hospital in from one half to two

hours following injury. In each of these traumatic cases the following symptoms and physical findings were present: (1) generalized abdominal pain, most marked in the left upper quadrant, associated with referred pain to the left shoulder, (2) abdominal tenderness in the left upper quadrant, (3) rigidity of the abdomen most marked in the left upper quadrant, (4) left flank dulness and (5) shock. All patients were operated on as soon as shock had been controlled by whole blood transfusions and blood plasma. There was one death in the series of eight cases. This occurred in a 4 year old boy whose splenic rupture was complicated by severe laceration of the left lobe of the liver. The remaining seven patients made uneventful postoperative recoveries.

Delayed Hemorrhage.—Occasionally a traumatized, or ruptured, spleen will show little or no evidence of hemorrhage or will have apparent cessation of all bleeding for a number of days but subsequently, and usually suddenly, will manifest symptoms of severe internal hemorrhage. McIndoe reported such a case and collected forty-five similar cases from the literature in 1932[5] and Harkins and Zabinski have added a great number of cases since that time.[1] This report adds two more to this list. The number of days intervening between the initial injury and the secondary hemorrhage in the cases reported was thirty days in one instance and in the other twelve.

The first of these cases was a white male, 48 years of age, admitted to the hospital with a diagnosis of perinephritic abscess of the left kidney because of severe steady left flank pain associated with chills and fever. During the period of laboratory and roentgen ray studies of this case the possibility of some gastrointestinal disturbance was considered because of negative pyelograms. Two hours after the patient returned from the Roentgen ray Department following a barium enema he rapidly developed profound shock and air hunger. Examination disclosed dulness in the left flank and tenderness and rigidity of the entire abdomen, most marked in the left upper quadrant. His hematocrit reading was 28V per cent and red blood cells 3,500,000. A diagnosis of internal hemorrhage was made. Blood transfusions and plasma were given in preparation for surgery. At operation it was discovered that a huge subcapsular hemorrhagic clot, which involved the entire surface of the spleen, had ruptured with the discharge of free blood in the general peritoneal cavity. Splenectomy was performed and the patient made an uneventful recovery. In this case the possibility of trauma was considered during the period of observation but he consistently denied any bodily injuries. After his operation he suddenly recalled that about one month previously he had been involved in a fracas in which he received a kick or blow in the left flank region. The injury was considered by him to be so trivial at the time of occurrence that he did not seek medical advice.

The second case of delayed hemorrhage was that of an 18 year old white male who was brought to the hospital following an automobile accident. On admission, examination revealed multiple fractures of the ribs in the left lower thoracic cage posteriorly, hemothorax and no pathologic abdominal findings. He was treated conservatively with daily aspirations of hemothorax. He progressed well to the twelfth day when he developed profound shock with a blood pressure of 70/50, pulse 120, subnormal temperature, air hunger, pain in the abodmen, tenderness and rigidity of the left upper quadrant of the abdomen, together with left flank dulness. A diagnosis of delayed rupture of the spleen was made and the patient was prepared for surgery with oxygen, whole blood transfusions and plasma. At operation a delayed rupture of the spleen with subcapsular clot and secondary rupture of the clot was found, with free blood in the peritoneal cavity. After splenectomy the patient made an uneventful recovery.

Stab Wound of Spleen.—Two patients were admitted with stab wounds in the left upper quadrant and left flank of the abdomen. Both were explored and severe lacerations of the spleen encountered. In both instances free blood was present in the peritoneal cavity. In one case lacerations of the stomach, transverse colon and pancreas complicated the splenic injury. Splenectomy was performed and the lacerations of the other viscera were repaired in the usual manner. The other case had only a splenic laceration with no other visceral involvement. Both patients made uneventful recoveries and were discharged from the hospital on the tenth postoperative day.

Banti's Disease.—The findings of a large group of cases characterized by anemia of a secondary type with leukopenia, progressive splenomegalia, gastrointestinal hemorrhage, cirrhosis of the liver and ascites, in which the disease runs a chronic course and which has no known cause, can be designated in the clinical pathologic entity of splenic anemia, or Banti's disease. The spleen in this group is enlarged enormously, sometimes attaining the weight of 7,500 gms. The rationale of splenectomy in these cases may be stated briefly. The operation lightens the load that has been thrown on the liver by reducing by at least 20 per cent the volume of blood entering the portal circulation and removes possible toxic substances originating in the spleen. It removes the splenic factor in destruction of blood and produces adhesions for the establishment of collateral circulation. The effect of operation as reported in the literature has been most gratifying, even in many of the advanced cases in which hepatic damage was present. These patients show a rapid improvement of the anemia and a rise of the leukocyte count, followed by a general improvement of the health as well as an improvement of the hepatic function in a large percentage of cases.

One case of Banti's disease was treated during

this period with splenectomy, a 30 year old white male who had had two episodes of gastrointestinal hemorrhage prior to admission in November 1946. The findings of a splenomegalia, anemia secondary in type, with a Hb. of 9 gms., white blood count of 2,000, platelet count of 70,000 and normal liver function test, together with repeated negative gastrointestinal series justified the diagnosis of Banti's disease. Splenectomy was performed. Two weeks after operation the hemoglobin rose to 11 gms., white blood cells were 12,000 and platelet count 220,000. The spleen weighed 1,380 gms., its surface smooth and glistening. There were numerous large sinusoids through the section lined by endothelial cells and there was marked increase in fibrous connective tissue and a marked decrease in lymphoid tissue. Microscopic diagnosis was perisplenic and interstitial splenic fibrosis. The patient was discharged three weeks after surgical removal of the spleen. Since operation he has had one minor episode of gastrointestinal hemorrhage which did not require hospitalization. He has felt stronger and is able to lead a normal life.

Congenital Hemolytic Icterus.—The term "hemolytic icterus" includes all cases with increased hemolysis of red blood cells within the body, coincident with hyperplasia of the bone marrow associated with variable jaundice and splenogegaly.

The characteristic blood picture is a form of anemia in which the erythrocytes are spheroid and microcytic and are more fragile to hypotonic solution than normal. They present a greater general diameter than do the normal biconcave red cells and therefore only with greater difficulty do they pass through the venous sinuses of the spleen. These cells do not appear in rouleaux formation, a fact which seems to make them more liable to hemolysis. The increased fragility is another factor which probably aids in their destruction. That this destruction of erythrocytes takes place in the spleen has not been proved conclusively but the fact that hemolysis ceases following splenectomy, although the cell characteristics remain unchanged, is good evidence that the success of splenectomy depends on the removal of an organ which, because of its unique circulatory properties, is capable of destroying normal erythrocytes.

In this series was one case of congenital hemolytic icterus in which splenectomy was done. This was a case of a married white female, 24 years of age, who entered the hospital with complaints of a mild yellowish color to the skin and eyeballs which had existed as long as she could remember. She had numerous complaints of frequent sore throats, headaches, unexplained fevers and excessive menstrual flow for one year prior to entry into the hospital. Family history of the patient revealed that one brother and one sister had had mild jaundice since birth. The findings of a splenomegaly, jaundice, anemia and increased fragility of the red blood cells with negative gallbladder findings indicated that the underlying condition was due to congenital hemolytic icterus. Other laboratory examinations were normal. The icteric index prior to surgery was 40 units and following splenectomy, one month after discharge from the hospital, the icterus was down to 8 units. The hemoglobin prior to surgery was 60 per cent with 4,000,000 red blood cells and following surgery the hemoglobin rose to 87 per cent with 5,100,000 red blood cells. The spleen weighed 400 gms. and showed acute congestion, interstitial fibrosis and reticulo-endothelial hyperplasia.

Operative Procedure.—The operative procedure in all these cases was the employment of a left rectus muscle splitting incision extending from the costal flare down to 1 inch below the umbilicus. Incision was carried through all layers of the abdominal wall and immediately upon entering the peritoneal cavity the free blood was aspirated and the traumatized spleen was then delivered into the abdominal wounds. The splenic pedicle was isolated and the splenic artery and vein were ligated and severed individually. The smaller vessels entering the gastrosplenic ligament at the upper pole usually were double clamped, cut and tied. The major vessels of the splenic pedicle were tied with 00 silk sutures and the proximal stumps of each one of the vessels were secured with a second tie. In cases of liver laceration Oxycel gauze was used to control the hemorrhage from the lacerated surfaces. Loose mattress sutures of 0 chromic catgut were used to secure the gauze and to approximate the lacerated edges. The abdominal wounds in all cases were closed with either catgut or interrupted 000 silk sutures. The anesthetic used in most cases was cyclopropane but on two occasions spinal anesthetic was employed.

All of the cases operated upon in the series had whole blood transfusions started before operation and transfusion continued during the operative procedure, thus minimizing the danger of anesthetic shock in these cases.

SUMMARY

A brief discussion of the indications for splenectomy has been presented in addition to the presentation of fourteen cases of splenectomy performed at the Kansas City General Hospital during an eighteen months' period starting in January 1946 and ending July 1, 1947. Of the fourteen cases eight were traumatic ruptures of the spleen with, or without, associated injuries, two cases of delayed rupture of the spleen, two stab wounds, one case of Banti's disease and one case of congenital hemolytic icterus.

I wish to stress several points in traumatic rupture of the spleen: (1) referred pain in the left shoulder in seven out of the eight cases, (2) the constant findings of marked tenderness and rigidity in the left upper quadrant of the abdomen, (3) moderate flank dulness on percussion.

On a nine months' follow-up on the case of splenectomy for Banti's disease, the patient had

only one mild flare-up of gastrointestinal hemorrhage which did not necessitate hospitalization. The blood picture showed a marked improvement in the anemia.

Follow-up on the case of congenital hemolytic icterus has shown the anemia to have disappeared and the jaundice to be fading although the characteristic changes in the blood such as spheroid microcytosis and increased fragility of the erythrocytes still persisted.

Two cases are reported of delayed rupture of the spleen operated on in this period which will add to the literature.

Kansas City General Hospital.

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EPISTAXIS

THE USE OF STERILE MARINE SPONGES IN ITS CONTROL

O. JASON DIXON, M.D., *Kansas City, Missouri*

Epistaxis is one of the most annoying complaints with which the physician is confronted. The alarm which is aroused is entirely out of proportion to the seriousness of the complaint. The loss of blood may be trivial in amount, yet to the anxious relatives it appears that the patient rapidly is becoming exsanguinated. Fortunately, the most profuse type of epistaxis occurs in patients with hypertension, and often becomes an automatic and essential type of therapy. However, this explanation seldom suffices to relieve the anxiety of those concerned, and the physician is faced with the responsibility of stopping the bleeding.

Once this vascular escape has been established, it is apt to reoccur, and no form of local therapy inhibits its reoccurrence. Cauterization of the ruptured vessels, in most instances, is more harmful than beneficial. It produces an area of necrosis which may control the bleeding temporarily but, when bleeding reoccurs, it is much more profuse and more difficult to control, due to the destruction of the smaller vessels and the fibrous extension about those of larger caliber. Also, the scar tissue which has been produced by the cautery, inhibits the spontaneous closure of the open vessel and the formation of a firmly adherent occluding thrombus. Chemical cauterization has the same objectionable features and, in addition, injures the mucous membrane in other areas along the respiratory tract, often producing ulceration with necrosis and a new hemorrhagic foci. Such vigorous treatment may produce a perforation in the nasal septum.

I have found the use of intranasal gauze packing, either plain or medicated, an unsatisfactory method for the control of epistaxis. It should be remembered that the primary objective in the control of bleeding in any area of the body is to close the vessel at the site of the vascular lesion. The more directly the method is applied, the more quickly and completely is the loss of blood controlled. Abdominal surgeons have learned this lesson quite well and no longer does one see the abdomen packed with gauze in a futile attempt and with false expectations that this is the end of the trouble. The abdominal surgeon now, when he meets with this complication, opens the abdomen and goes directly to the site of the vascular lesion, where he clamps and ligates the open vessel. Unfortunately, in the control of epistaxis, this cannot be accomplished accurately, but one can and should apply efforts to locate the exact bleeding point and use the most satisfactory method for the control of the blood flow as it leaves the open vessel. This may be most effectively accomplished by making no effort immediately to control the bleeding but by removing all of the blood clots within the nose and carefully inspecting the lateral wall of the septum under direct observation. Obviously, continuous pressure is the only means at the physician's command to control the bleeding at this particular site.

A NEW TECHNIC FOR THE CONTROL OF EPISTAXIS

After having tried various other accepted methods for the control of this annoying condition, I have had satisfactory results by using small, firm sterilized marine sponges. A sufficient number of these sponges, moistened in sterile normal saline, should be packed firmly within the nasal chamber and left in that position until the processes of thrombosis and organization have had time to take place completely. If the bleeding continues after these sponges have been applied, then they should be removed immediately and reinserted. It is well to insert the first sponge back and beyond the site of the lesion because there may be an additional bleeding point that is not easily observed. Also, this primary posterior sponge acts as a support for the other sponges which are subsequently inserted and affords a tighter packing within the nasal chamber. Any further postnasal packing is unnecessary. Should these posterior placed sponges fall into the epipharynx, no harm is caused as they are easily expelled and, due to their elasticity, do not enter the trachea. Should they be swallowed, no harm results.

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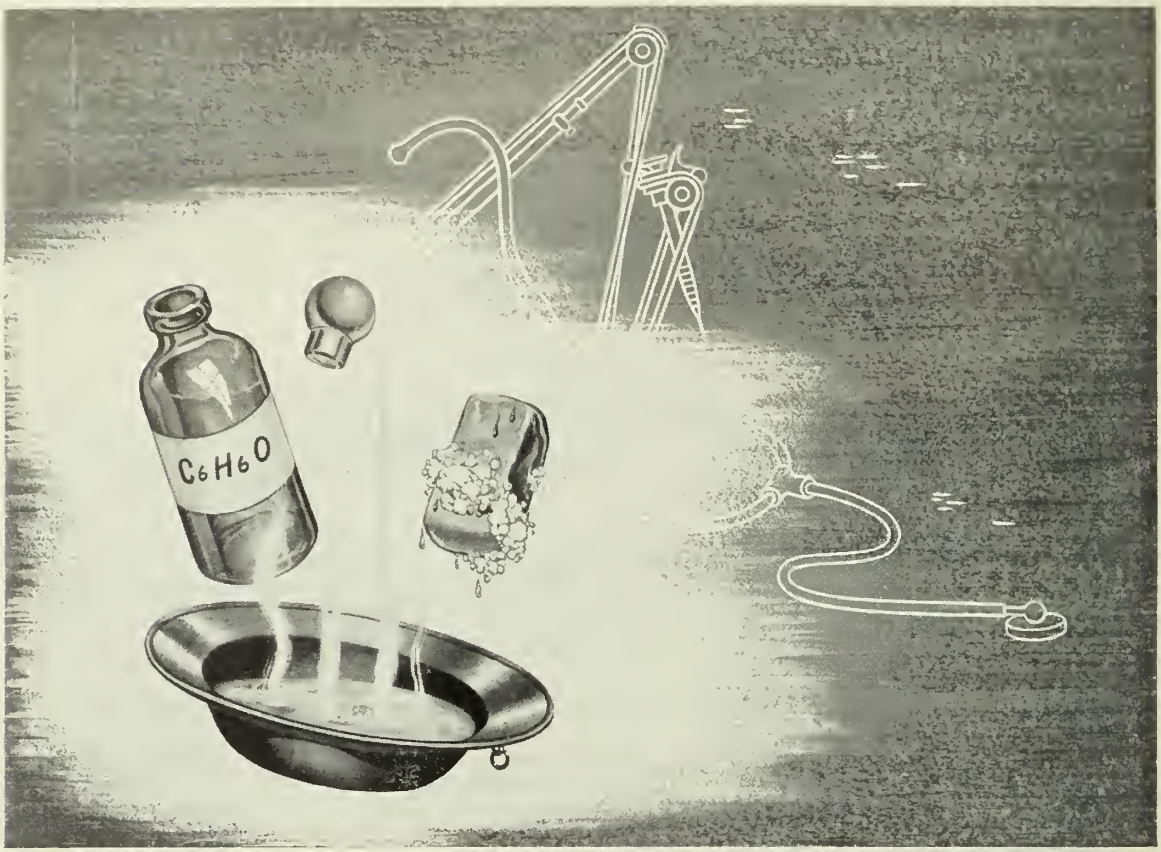
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When Robert Koch showed in 1878 that wounds were not infected by bacteria from the air, Lord Lister's "donkey engine" and carbolic spray began to disappear from operating rooms. But his antiseptic principle prevailed . . . ending the era of soiled coats and blood-caked forceps . . . heralding the *sterile cleanliness* of modern medicine and dentistry.

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lubricant such as vaseline or oil, should be used with these marine sponges. The latter inhibits the surface exposure of the blood as it enters the sponge, and it is this surface exposure, which is increased greatly by the use of the sponge, which helps to promote normal clotting. Also, these oily substances prevent the spontaneous drainage of the normal secretions which are thrown off by the mucous glands. It is the retention of these secretions, which are increased by the irritation of the foreign body packing within the nose, which makes gauze such an objectionable type of packing because these retained secretions, along with the blood, act as a culture media for the bacteria which are present. The secondary infection which follows the traumatic packing of the nose often accounts for the more serious types of complications, such as suppurative pan sinusitis and infectious extension through the eustachian tube to the middle ear and the mastoid process.

The smaller type of marine sponges are more adapted to this type of packing because of their finer, softer texture and greater elasticity, affording better drainage and producing much less pressure damage to the nasal mucous membrane. They also adapt themselves better to the irregular surfaces of the nasal chamber. They may be cut with a sterile pair of scissors to the approximate size and shape of the distal end of the patient's thumb and inserted in the nose with bayonet forceps.

STERILIZATION OF MARINE SPONGES

Although the nose is normally an infected area, yet, since this is an open wound, all of the sterile precautions should be taken because it is the entrance of new organisms which frequently set up a secondary infection. It should be kept in mind that these sponges are never sterile when purchased and, in using them in the mastoid cavity where the dura often is exposed, I have found thorough sterilization extremely important. Unfortunately, this cannot be done by boiling or autoclaving without destroying the elasticity of the sponge. Following is an efficient method of sterilization: (1) Remove all foreign bodies in the sponge, (2) soak over night in tincture of green soap solution, (3) wash thoroughly by squeezing under running water, (4) soak in Bard Parker solution over night (5) again wash thoroughly by squeezing under running water, (6) place in a shallow sterile pan and thoroughly dry under the direct rays of an electric heater or drier, (7) place in sterile widemouthed covered jars until used.

This method of sterilization is quite satisfactory, as I have never had any secondary infection occur. Due to the rather time consuming process, it is advantageous to have these sponges ready for use by keeping them in a sealed sterile container prior to their expected use.

AFTERCARE

Following the control of the bleeding by this marine sponge packing, there is some localized reaction and a tight feeling within the nose. It is a temptation, after twenty-four hours, to remove these sponges and relieve this complaint. This, I have done numerous times, and then was obliged to repeat the packing. If removed within twenty-four hours, the blood clot which has formed within the meshwork of the sponge is continuous with the wound in the mucous membrane. The removal of the sponge brings this clot away and, by withdrawing the thrombus from the vessel, reopens it and it may be necessary to control the bleeding again by repacking.

If the original sponges are left in position for forty-eight hours or longer, the clot within the sponge breaks down and separates spontaneously from the underlying thrombus, with no interruption of the normal healing. It must be kept in mind that the most rapid wound repair takes place with the least amount of local disturbance.

Often it is more satisfactory to remove only one sponge at a time. Even when an offensive odor is present, as it frequently is, this should cause no alarm. In using marine sponges for the control of infected otogenous hemangioma,[1] I left them in a closed wound until they completely disintegrated. The odor of the B coli contamination was so offensive that the entire hospital floor was affected, yet these patients exhibited no symptoms due to this infected retained foreign body. These soft sponges rapidly disintegrate and are passed off with the suppurative debris.

To avoid the annoyance of repeated calls to the patient with an uncontrolled persistant epistaxis, I have found nothing in my experience with the management of this distressing nasal lesion which has afforded such satisfaction and good results as the use of these pliable marine sponge packs.

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USE BLOOD PLASMA IN TREATMENT WITH DICUMAROL

Hemorrhage in persons who overreact to dicumarol, a drug which prevents blood from clotting, can be controlled by administering blood plasma, say three physicians from the Departments of Medicine and Surgery, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital, New York.

Writing in the October 9 issue of *The Journal of the American Medical Association*, Stuart W. Cosgriff, Richard J. Cross, and David V. Habit say that 20 to 25 per cent of persons who receive dicumarol as treatment for blood clots are "hyperreactors."

In these people the usual dose of the drug not only prevents the blood from clotting but also produces a dangerous condition in which hemorrhage may occur. Administration of blood plasma is immediately effective against this condition, the physicians point out.

HYPERTENSION AND POSTOPERATIVE RESULTS FOLLOWING SYMPATHECTOMY

JOHN M. ELLIS, M.D., *St. Louis, Missouri*

In recent years there has been much discussion regarding the value of the sympathectomy in surgical treatment of hypertension. According to the literature, many writers seem to feel that the treatment of essential hypertension is both a medical and a surgical problem. It is the purpose of this paper to analyze the case histories of hypertensive patients for whom sympathectomies have been done at the Missouri Pacific Hospital in St. Louis.

Since 1943, Dr. W. E. Leighton has performed at the Missouri Pacific Hospital twenty-two bilateral subdiaphragmatic sympathectomies in an effort to relieve patients suffering from hypertension. It is intended, first, to describe the clinical aspects of these hypertensive patients; second, their hospital courses and, last, their follow-up courses after the operation. The details of fourteen cases will be discussed since these cases were operated upon prior to January 1, 1948, and offer more time for follow-up observation.

During the preoperative period the medical department studied each patient thoroughly by a number of methods. The age, vascular changes in eyegrounds, kidney function, blood pressure, cardiac function and previous illnesses that may have contributed to the initiation of hypertension were recorded. A study was made of the various tests designed to alter blood pressure either by depression or stimulation of the sympathetic nervous system. The sodium amytal test was used routinely in each case and, with a test dose of 7½ grains of sodium amytal, it was found that the blood pressure was lowered from 10 to 30 points systolic. However, these tests were so uniform in effect that I do not believe they are of much value in selecting patients best suited for sympathectomy. The tests served well those pioneers who first performed sympathectomies for hypertension, but there are now other criteria of more practical value in selecting a candidate for sympathectomy.

The hypertensive patients in this series presented clinical histories that were almost identical. They had complaints of headache, usually occipital, and they all complained of dizziness. Two of them had fainted at different times. All of these patients quite evidently were nervous and restless, and it is important to note that they were psychologically depressed as well as emotionally unstable. Two patients sobbed bitterly as they related their histories on admission, while a third and fourth wept frequently during their hospital courses. Dr. Archie Carr has stated that many neurologists believe this tearful and emotional instability is the result of degenerative changes in the thalamus of the brain.

In the review of past illnesses preexisting kidney disease was found in the background frequently. Whether or not this was coincidental still remains a question, but one patient had a ureteral calculus in 1931, and a second patient on admission presented a unilateral hydronephrosis. An arteriogram was done on this patient, and the urologists recorded that this hydronephrotic kidney was ischemic. A third patient stated that he had had Bright's disease as a child, while a fourth stated that he had "black water fever" on two separate occasions, the last time in 1917. A fifth had right renal ischemia on arteriogram, with unilateral hydronephrosis and a renal calculus on the same side. A combined sympathectomy and nephropexy was performed for this condition. A sixth patient had a double ureter with an accompanying double renal pelvis on one side, the lower renal pelvis of which harbored a calculus. A combined sympathectomy was done along with a nephropexy on the upper pole of the kidney and resection of the lower pole. The vascular pattern around this kidney was bizarre and there was not the usual anatomic pedicle. It is worth mentioning that, with two exceptions, each patient in this series had albuminuria expressed as a trace to one plus. In spite of this kidney damage, most of the laboratory tests were relatively normal with respect to nonprotein nitrogen, phenolsulfonphthalein, and urine concentration tests. The results were altered from the normal but were near the lower border of normal.

The ophthalmologist recorded studies of the eyegrounds in order that something might be known of the degree of generalized vascular damage which existed in these hypertensive patients. Five patients had normal vessels upon fundoscopic examination, while nine showed cotton wool exudate and attenuation of arterioles of varying degrees. However, this knowledge proved of little prognostic value in the older patients. One of the five patients who was reported to have a normal fundus had a cerebral hemorrhage four years after completion of his sympathectomy. A second patient with a normal fundus exhibited myocardial damage in an electrocardiogram taken prior to the time of his operation, and he died suddenly three months following completion of his sympathectomy, presumably of a coronary artery thrombosis.

A comparison of electrocardiograms in this series taken before and after the sympathectomies was made. The first change seen in the hypertensive patient's electrocardiogram is a change in the T-wave of lead III. It appears certain that the T-III is

---

Presented at the Missouri Pacific Hospital monthly staff meeting, April 5.

Former Resident in Surgery, Missouri Pacific Hospital, St. Louis.

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first flattened and then inverted, followed later by the more severe changes of slurring of the QRS complexes and finally by varying degrees of infarction with inversion of the T-I, T-II, and T-IV waves. Chest plates revealed that all patients had enlarged hearts except two.

Bridges, Johnson, Smithwick and White[1] recently have stated in effect that patients with hypertension who were subjected to bilateral lumbodorsal sympathectomy frequently showed an improvement in the electrocardiographic pattern one year or more postoperatively. This opinion cannot be substantiated with electrocardiograms in this series. Two patients who had myocardial damage prior to surgery have died of coronary artery disease. They both had harsh systolic murmurs with considerable change of pattern in the electrocardiogram. The first patient showed the T-I flattened and the T-II and T-IV diphasic, with slurring of the QRS complexes. The second patient exhibited diphasic T-I and T-II, isoelectric T-III, and slurring of the QRS in all leads.

The operations were done in two stages, using the Adson technic described by Craig.[2] A spinal anesthetic of 100 mg. novocain and 10 mg. pontocaine was adequate and effective. The twelfth rib was resected for ample flank exposure and the incision carried down to, but not including, the peritoneum. The entire procedure was extraperitoneal. The three splanchnic nerves were interruptd for a distance of about 2 centimeters at the point of their emergence from the leaf of the diaphragm. The adjacent semilunar ganglion was isolated and excised as well as the upper two lumbar sympathetic ganglia. The operation was performed, as mentioned, in two stages; either the right or left side was operated on first and the other side approximately two weeks later. The average number of days of hospitalization following the first operation was twenty-seven days. This does not include the period of observation prior to surgery.

The postoperative results have been varied and deserve close scrutiny in order that future sympathectomies may be reserved for those hypertensive patients who can be expected to receive at least temporary relief from their symptoms. Two of the patients are now dead, ages 52 and 55 years. As previously mentioned, one died suddenly in bed three months following his sympathectomy, presumably of coronary thrombosis. The second patient died on his thirteenth postoperative day, and he died a cardiac death. A third patient, at the age of 61 years, had a cerebral hemorrhage four years following his sympathectomy and, at the present time, is vegetating more or less with the same symptoms of emotional instability and a cord bladder, the exact etiology of which has not been determined. He was operated on in 1943 with a blood pressure of 204/106. Upon discharge from the hospital following the sympathectomy his blood pressure was 146/110. He recently was hospitalized for treatment of his cord bladder, and his pressure has climbed to 190/110 at complete bed rest.

A fourth patient, aged 50, was observed eight months postoperatively. His original blood pressure was 200/140. On discharge after his sympathectomy his blood pressure was 180/120. Subsequently this man worked eight months as a station agent and, on readmission to the hospital, his blood pressure had climbed to 210/130. On this readmission he complained of dyspnea on exertion, palpitation, tinnitus and numbness in the pubic region. He remained off duty for two months and returned showing that rest had dropped his blood pressure back down to 164/104, lower than it had ever been, and he stated he felt much improved. This same patient was seen again six months later, sixteen months postoperatively, and he than exhibited for the first time a slurred QRS complex in lead III and a flattened to isoelectric T-wave in lead IV. Fundoscopic examination revealed continued attenuation of the arterioles, and he still had a trace of albuminuria. However, this patient is still able to work as a station agent.

A fifth patient, aged 54, was never rehabilitated to the point so he could resume employment and is now on a railroad retirement pension.

Seven patients in this series were more than 50 years of age and six patients more than 50 years of age had poor results. Peet[3] has stated that the highest percentage of cases with sustained worthwhile lowering of blood pressure occurred in patients less than 30 years of age. I believe this to be correct and important in the selection of patients best suited for sympathectomy.

A 22 year old man, the youngest patient in this series, had a blood pressure of 260/140. He was discharged from the hospital twenty days after completion of the sympathectomy, and his systolic pressure had dropped 100 points and his diastolic pressure had dropped 20 points on the mercury manometer. He has not returned for further treatment and according to the records is still employed.

The next youngest patient was a 26 year old woman with a blood pressure of 240/144. She was so unstable on admission that her husband stated she could not bear to sit through a moving picture show. She wept bitterly and frequently during her hospital course prior to sympathectomy. After the sympathectomy was performed, her systolic pressure dropped 130 mm. mercury and her diastolic dropped 70 mm. mercury. She was changed from a mildly psychotic person to one who appeared reasonably happy and content. It is not conceivable that bed rest alone caused this blood pressure to be lowered from 240/144 to 110/74.

The next patient in age was a 37 year old man with a blood pressure of 200/138 who stated on admission that he had been troubled with headaches as long as he could remember. It is this patient who had Bright's disease as a child. He was seen twenty-two months following his sympathectomy and his blood pressure was 114/78, a drop of 86 mm. sys-



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tolic and 60 mm. diastolic. The symptoms of headache and dizziness had not been present at any time during his postoperative period of convalescence. An electrocardiogram showed a normal pattern.

The remaining patients in this series were operated on and have never returned for further treatment or else they returned to the outpatient clinic with milder ailments such as seborrheic dermatitis. Since these people are still employed by the railroad company and are entitled to further hospitalization, it can be assumed safely that they have not required further treatment referable to hypertension.

There are a number of other features that should be listed as credits for the subdiaphragmatic sympathectomy. No patient in this series died an operative death. The average operating time was short in that the patient was undergoing surgery as a rule for only an hour to an hour and a half. Postoperative complications were minor ones. Two patients suffered shock, but this was promptly relieved by intravenous glucose, 1,000 cc.; another patient developed a wound hematoma which became infected, but even so his hospital stay was shorter than the average. Nursing and bedside care was held to a minimum. Other than for observation for shock the first few hours following the operation, there was no nursing problem beyond that of any other patient confined to bed for ten days to two weeks.

In conclusion, it should be remembered that these hypertensive patients were quite ill, almost incapacitated, and had not responded satisfactorily to medical management. They were tired, depressed and in pain. The bilateral subdiaphragmatic sympathectomy was performed not as a curative measure but as the best physiologic answer so far advanced in the treatment of essential hypertension. Again, it should be distinctly made clear that young patients in their twenties and thirties with severe hypertension frequently are relieved of symptoms related to hypertension following subjection to the subdiaphragmatic sympathectomy. Older patients with fixed vascular changes and irreparable degenerative damage cannot be helped appreciably by sympathectomy.

St. Louis City Hospital.

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BOOK REVIEWS

PATHOLOGY OF TUMORS. By R. A. Willis, D.Sc., M.D., Sir William H. Collins Professor of Human and Comparative Pathology, Royal College of Surgeons, London. Formerly Pathologist to the Alfred Hospital, Consultant Pathologist to the Austin Hospital for Chronic Diseases and Lecturer on the Pathology of Tumors in the University of Melbourne, Australia. Butterworth & Co. (Publishers), Ltd., London, England. C. V. Mosby Company. St. Louis. 1948. Price $20.00.

The production of a book of nearly one thousand pages on the pathology of tumors by one man is truly a monumental task. With anyone who produces a considerable amount of work, one is certain to find something to criticize in it no matter how good or important the work is in the overall. Therefore I will attempt to present the general features of this work rather than to search it for items that might be subject to controversy.

An early chapter deals with the experimental production of carcinoma and seems to be quite complete. The references include work done by Dr. Cowdry and his co-workers as well as the important early work of Leo Loeb. There is a chapter on statistics and one on tumors in animals. The author thinks that transplantation experiments are of limited value. The origin of tumors, the structure and function of tumors, the spread of tumors and metatasis have each a chapter.

Starting at chapter thirteen, page 208, and continuing through the remainder of the book to page 992, all the tumors known to the pathologic world are described and discussed. Space does not permit details from these pages to be reviewed. Suffice it to say that the subject matter is well presented in easily readable style. The gross and microscopic descriptions are adequate without being too tedious. The illustrations are both good and numerous. For example, there are twelve illustrations of varieties of basal cell growths. There are five hundred illustrations in all.

To sum up, this is a worthwhile book. It is well typed and references and index are all that one could ask for. Some of the author's ideas on the origin of cancer classification are open to discussion, but who knows anything about cancer anyway. While I would not discard my Ewing for any book yet written on this subject, I will be glad to place Willis beside it as a valuable reference to help in a better knowledge of the pathology of tumors. R. L. T.

CLINICAL THERAPEUTICS, A MANUAL OF, a Guide for Students and Practitioners. By Windsor C. Cutting, M.D., Professor of Therapeutics Stanford University School of Medicine, San Francisco, California. Second Edition, Illustrated. W. B. Saunders Company. Philadelphia and London. 1948. Price $5.00.

This book is written compactly and compactly made, and covers a wide field of therapeutic endeavor. It contains 501 pages of general text and 172 pages of appendix. Appendix headings are "Special Procedures," "Physiotherapy," "Poisoning,' "Diet Lists," "Metric and English Equivalents," "Aids in Prescribing," "Tables and Charts for Weight," "Height and Age," "Clinical Physiological Data," and "List of Prescriptions, Drugs and Doses." This list gives an inkling of the scope of the book which is borne out on perusing the general text. The latter is organized so as to present much the same table of contents as a textbook of medicine.

The author shows a felicitous ability to select and present in a few words the essentials of treatment of each condition discussed. If offered as a Textbook, this book would be criticized as covering too many subjects too skimpily; as a manual, however, it fulfills its purpose eminently well. A single outstanding reference is given at the end of most diseases covered. Drugs mentioned are almost entirely chosen from the "U. S. Pharmacopeia" and "National Formulary," or accepted for "New and Nonofficial Remedies." The metric system is emphasized though dosages in both systems are given. T. R. J.

PRESIDENT'S PAGE

Two or three days after you receive this issue of The Journal, you and I and all our fellow Americans will go to the polls and cast our ballots to elect a President of these United States. While all are more or less interested in the outcome of state and municipal elections and perhaps a little more in the congressional races, the main event far overshadows these. The medical professional should be informed about the issues concerning medical practice. One has seen many articles and has heard much about the dangers of compulsory health insurance and the regimentation of the medical profession.



This issue of The Journal contains an article about the attitudes of the President and Mr. Dewey on the question of compulsory health insurance. It also gives the replies of some of the Congressional and gubernatorial candidates to a letter sent to each of them asking for a statement. I urge you to read these letters carefully. You will note that some of the Congressional candidates state that they are opposed to state medicine but do not believe the Wagner-Murray-Dingell Bill is state or socialized medicine. President Truman has made the same statement several times.

There are too few places left in the world where one still may express his opinion openly, vote for his choice of candidates and remain free. The United States of America is one of these places. It is our constitutional right and duty to vote on Tuesday, November 2.

Robert Mueller M.D.

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NOVEMBER, 1948

EDITORIALS

NATIONAL DIABETES WEEK

The discovery and treatment of diabetes mellitus at an early stage demand the attention of all practicing physicians. Failure to discover and treat diabetes early results in preventable disabilities and impairments of health. In the Diabetes Exhibit at the Annual Session of the American Medical Association held in Chicago in June 1948, it was shown that the mortality rate for diabetic persons first seen when a complication had occurred was three times the rate for those seen early and before impairments had developed. Actually the future for the diabetic patient under modern medical treatment is brighter and more hopeful today than ever before.

In 1929, Drs. George H. Bigelow and Herbert Lombard began a study of chronic disease in Massachusetts which led to the publication of statistics showing that the number of diabetic patients in Massachusetts was far higher than had been heretofore thought. In 1935, a national health survey was conducted which confirmed these figures. In Oxford, Massachusetts, results of a survey by the United States Public Health Service indicate that at least a million undiagnosed diabetic persons exist in the United States and Canada.

Medical societies now have the opportunity to take the lead in the fight against diabetes in response to an appeal to the practicing physicians of the United States, now being made by the Committee on Diabetes Detection of the American Diabetes Association. This committee was appointed by Dr. Charles H. Best, president, at the annual meeting in June 1948. Plans are being formulated for National Diabetes Week December 6 to 12, 1948.

The St. Louis Clinical Diabetes Society has accepted the responsibility of diabetes case finding in St. Louis and St. Louis County. Plans and organization have been under way for several months. The Society recognizes that there are two major problems: to make the public realize the need for the individual to have his urine examined for the presence of sugar; to obtain the specimens, get them examined and report the results.

The first problem will be attacked through an appeal to newspapers, radio stations and other sources of publicity. The second problem is being approached through cooperation with the Retail Druggists Association for the collection of specimens, examining stations will be arranged in both city and county and the simplicity of the modern tests will allow the use of volunteer workers. The question of reference of suspected cases and further work on these has been referred by the Society to medical societies in the area.

The overall objectives of the American Diabetes Association are more graduate courses in diabetes for physicians, providing better laboratory services and helping with instruction for patients.

If other organizations cooperate as is the St. Louis Clinical Diabetes Society, the physicians themselves actively promoting and carrying through such a project, much good will be done and by those best qualified to protect the health of the public.

NUMBER OF PHYSICIANS

According to a tabulation being made by the American Medical Association, there were approximately 199,755 living physicians in the United States on June 1, 1948. This does not include June graduates of medical schools. Some of these physicians are retired, some are not in practice and some are employed by federal, state and local health agencies. As the tabulation progresses, subsequent figures will present breakdowns showing the number in each of these groups.

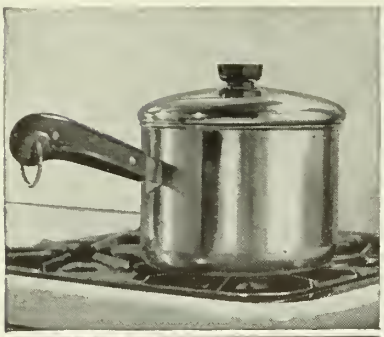
Even with the figures available, one important statistical fact is evident. The approximate number of living physicians in the United States is now 17 per cent greater than the 170,163 listed in the 1940 American Medical Association Directory. The population of the United States has increased only 12 per cent since 1940. In view of the many statements concerning the shortage of physicians, this statistic, while only an approximate one, is worthy of mention.

The figures quoted are released by the Bureau of Medical Economic Research of the American Medical Association and taken from the punch card index, which is based on information being obtained also for the "Directory." Since this information is not complete, the figures are given as approximate figures, subject to final correction.

NEWS NOTES

Physicians who have appeared on programs of component medical societies under the auspices of the Committee on Postgraduate Course in recent months follow:

E. A. Smolik, M.D., St. Louis, spoke at a joint dinner meeting of seventeen county medical societies at Sikeston on "The Management of Head Injuries."



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A. P. Rowlette, M.D., Moberly, spoke at a joint dinner meeting of nine county medical societies at Chillicothe on "Hand Injuries."

Arthur W. Neilson, M.D., St. Louis, spoke at a joint dinner meeting of ten county medical societies at Kennett on "Common Skin Diseases and What to Put on Them." Dr. Neilson also spoke at the Ninth Councilor District meeting at Rolla on this subject.

O. P. J. Falk, M.D., St. Louis, spoke at a meeting of the Fifth Councilor District at Fayette on "Coronamide as an Adjunct to Penicillin Therapy."

B. L. Sinner, M.D., St. Louis, spoke at a meeting of the Ninth Councilor District at Rolla on "The Management of Burns."

Everett D. Sugarbaker, M.D., Jefferson City, Jefferson City, spoke at a joint dinner meeting of eighteen county medical societies at Nevada on "Carcinoma of the Large Bowel."

Paul C. Schnoebelen, M.D., St. Louis, spoke at a joint dinner meeting of physicians from Lincoln, St. Charles and Warren counties on "The Scout Film in X-ray Diagnosis."

Joseph Hardy, Jr., M.D., St. Louis, spoke at a dinner meeting of the physicians of the Cole County Society and their wives on "Common Obstetrical Problems."

M. Pinson Neal, M.D., Columbia, spoke at a dinner meeting of the Pike County Medical Society on "Diagnoses Commonly missed in General Practice." Dr. Neal also spoke at a dinner meeting of the North Central Counties Medical Society at Unionville and at a dinner meeting of the South Central Counties Medical Society at Mountain Grove.

Vincent T. Williams, M.D., Kansas City, spoke at a joint dinner meeting of ten county medical societies at Chillicothe on "The Management of Burns."

C. E. Burford, M.D., St. Louis, spoke at a meeting of the Fifth Councilor District on "The Prostate Gland."

Richard Paddock, M.D., St. Louis, spoke at a meeting of the Ninth Councilor District on "The Use of Glandular Substances in Female Disturbances."

Paul Murphy, M.D., St. Louis, spoke at a dinner meeting of the Cole County Medical Society on "Diagnosis and Treatment of Pulmonary Lesions."

H. R. McCarroll, M.D., St. Louis, spoke at a meeting of the St. Francois-Iron-Madison-Washington-Reynolds Counties Medical Society on "Fractures of Hip, Elbow, Shoulder and Knee."

D. L. Yancey, M.D., Springfield, spoke at a dinner meeting of the Phelps-Crawford-Dent-Pulaski Counties Medical Society on "Pitfalls in Treatment of Common Fractures."

Harry Greene, M.D., Hannibal, spoke at a dinner meeting of the North Central Counties Medical Society at Lancaster on "Epigastric Pain."

Jack Martz, M.D., St. Louis, spoke at a meeting of the St. Francois-Iron-Madison-Washington-Reynolds Counties Medical Society on "Recent Advances in Drug Therapy as Related to Pediatrics."

H. O. Loyd, M.D., Jefferson City, spoke at a dinner meeting of the Phelps-Crawford-Dent-Pulaski Counties Medical Society on "Acute Congestive Cardiac Failure and Its Management."

Daniel B. Landau, M.D., Hannibal, spoke at a dinner meeting of the North Central Counties Medical Society at Lancaster on "Infant Feeding."

R. O. Muether, M.D., St. Louis, and William Knight, Jr., M.D., St. Louis, spoke at a dinner meeting of the Cole County Medical Society on "Chronic, Recurrent Pancreatitis."

Claude R. Bruner, M.D., Columbia, spoke at a dinner meeting of the North Central Counties Medical Society at Unionville on "Recent Developments in the Treatment of Eye, Ear, Nose and Throat Conditions of Interest to the General Practitioner."

A. B. Jones, M.D., St. Louis, spoke at a dinner meeting of the Phelps-Crawford-Dent-Pulaski Counties Medical Society on "Psychoneurosis."

William Knight, Jr., M.D., St. Louis, spoke at a meeting of the St. Francois-Iron-Madison-Washington-Reynolds Counties Medical Society on "The Differential Diagnosis and Management of Jaundice."

Eugene M. Bricker, M.D., St. Louis, spoke at a joint dinner meeting of the medical societies of the Tenth Councilor District at Farmington on "Diagnostic Problems of the Acute Abdomen."

Raymond A. Mezera, M.D., St. Louis, spoke at a meeting of the Jefferson County Medical Society on "Etamon Chloride and the Antihistamine Drugs."

Richard Sutton, Jr., M.D., Kansas City, spoke at a joint dinner meeting of ten county medical societies at Chillicothe on "Common Skin Diseases and What to Put on Them."

A. M. Estes, M.D., Jackson, spoke at a meeting of the St. Francois-Iron-Madison-Washington-Reynolds Counties Medical Society on "Coronary Heart Disease."

M. Pinson Neal, M.D., Columbia, recently addressed the staffs of the Veterans Administration hospitals at Fayetteville, Arkansas, and Muskogee, Oklahoma.

Vincent T. Williams, M.D., Kansas City, was a guest speaker at the Liberty Rotary Club luncheon on September 1. Glenn W. Hendren, M.D., Liberty, introduced Dr. Williams, and S. M. McCracken, M.D., Excelsior Springs, was a guest.

S. M. Sarno, M.D., Morehouse, was honored at a joint meeting of city officials and Kiwanis Club members at Morehouse on September 2 for his ten years of "loyal devotion to the health of the community."

Robert E. Bruner, M.D., Kansas City, spoke at a Kiwanis Club sponsored dinner in Springfield on September 1 on "The Cerebral Palsy Child."



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Harry K. Cohen, M.D., and Jack B. Brams, M.D., Kansas City, were installed as post physicians of the Liebman-Rosenbloom Post in Kansas City on September 28. Arthur C. Clasen, M.D., was made honorary post physician.

A Graham Asher, M.D., Kansas City; E. Lee Shrader, M.D., St. Louis; Edgar D. Baskett, M.D., Columbia, and Julius Jensen, M.D., St. Louis, have been named a committee of the Missouri Heart Association to furnish speakers on cardiologic subjects.

R. B. Watts, M.D., Wellington, was presented a bound volume containing the names of those of the 4,000 babies he has delivered who attended a fair in Wellington on September 25 and signed the volume. Dr. Watts has practiced in Wellington for fifty-four years.

The Clay County Medical Society's first annual clinical conference will be held at the Elms Hotel, Excelsior Springs, on November 4, beginning with a luncheon meeting and continuing through the evening.

CAMPAIGN NEWS

The position of President Harry S. Truman, Democratic candidate for reelection to that office, on the question of compulsory health insurance (Wagner-Murray-Dingell National Health Act) is well known. On several occasions, most recently, September 1948, he has called upon the Congress to enact legislation to provide compulsory health insurance for all the people of the United States.

The position of Governor Thomas E. Dewey, New York, Republican candidate for the office of President, on the same question was given in the October issue of THE JOURNAL. The open letter to Governor Dewey and a copy of his reply are reprinted.

OPEN LETTER TO GOVERNOR DEWEY

"Your extemporaneous remarks, recently addressed to the Oregon State Medical Society, dissipated the clouds of sinister propaganda which for years have emanated from certain governmental agencies and other similar sources.

"To many thousands of practicing physicians (of whatever political complexion) your message carried new hope. This is the first intelligent and comprehensive appraisal of national health matters which has been made public by a selected presidential aspirant, or by a President of the United States for that matter. Putting it mildly, we were overwhelmed, but delighted, to hear this problem discussed objectively by someone who—after investigating thoroughly both sides of the issue—actually knew what he was talking about.

"The medical profession has preached (and, with understandable hesitancy, has practiced) according to one dictum: Give Americans the best medical system, determined by cautious experimentation, which would lead to evolution, not revolution, in American health insurance technics. We oppose vehemently the adoption of foreign ideologies which have been conspicuous failures, according to American criteria.

"You have expressed your repugnance for these alien theories so clearly, so logically and so unequivocally, that no physician (who esteems his profession second only to his love of country) could conceivably withhold approval or appreciation of your stand. We thank you for being just plain honest!

"But what of Governor Warren? Your views and his are as opposite as black and white. He is alleged to have declared (in effect) that he would not leave the Governor's Chair until he had rammed through compulsory health schemes in California. What of him?

"News report, with national distribution, credit you as stating that Governor Warren is to have more duties, more responsibilities and more functions than ever before accorded a Vice President. That's swell. It has finally dawned on almost every thinking citizen that if each President would but say to himself: 'I am here for just one short span. May God help me do the best I can without at any time trying to perpetuate myself and my gang' —we'd have the perfect picture of a President. And, to do this properly, the President does need competent, adequate helpers and advisors. All this would strengthen immeasurably our democratic system. So again: Swell!

"Give Warren plenty of work, if that is your desire. But as the 'Crime Doctor' would say: 'There is just one little detail' we would like to know: Is it Dewey or Warren who will call the turn on this monstrosity termed 'health insurance'?

"Again, please accept the thanks of many who deeply appreciate the thought, the logic, the courage and the real Americanism you personally have displayed concerning this topic. This course requires more than political expediency, it necessitates putting the good of all our country first. Yet, there still remains that scintilla of doubt and question, which you could resolve so easily if you will.

"We would be honored to carry your reply to the physicians (and others) of Missouri, and to many in our Nation.

"Sincerely and respectfully,

"Vincent T. Williams, M.D."

REPLY OF GOVERNOR DEWEY

"On behalf of Governor Dewey, I acknowledge with thanks your letter of August 23 with the enclosures.

"He is most appreciative of your friendly interest and support. You may be quite sure that the Governor has not changed his views on socialized medicine since May.

"With best wishes and thanks in advance for such help as you can give in the campaign, I remain

"Watson Washburn, Acting Secretary."

Governor Dewey spoke to the House of Delegates of the Oregon State Medical Association last May. Part of his address follows: "Compulsory socialized medicine is no good. No variation of it is any good. It has never worked. It cannot be done. . . . It would utterly destroy the quality of medical care. . . . If a thing is evil the first job is to convince people that it is evil and is thoroughly evil, and destroys everything that we believe in. . . . I am unalterably opposed to it."

Opinions of the gubernatorial candidates of Missouri and those of candidates for the House of Representatives in Washington who answered an inquiry on this subject follow.

LETTER FROM MR. FORREST SMITH, DEMOCRATIC CANDIDATE FOR GOVERNOR OF MISSOURI

"In answer to your question No. 1, I will state: Federal legislation, relative to compulsory health insurance, commonly known as 'socialized medicine,' has been pending for several years in the Congress of the United States. As you know, I will have no voice in passing upon this legislation and it will entirely be subject to federal control.

"I am not completely informed as to the provisions of the various bills and to what you refer to as 'socialized medicine.' If the articles I have read in the public press correctly explain the provisions of these bills, I am against them. When I announced my candidacy for Governor of Missouri I stated in my platform that if elected to the high office of Governor of this state, I would foster and encourage a better health program for Missouri. This would include an expanded public health service, and expanded hospital facilities for the people of Missouri, fostered entirely by this state, in conjunction with the federal authorities, as I am firmly convinced we do not have either adequate hospital or medical facilities in rural areas. This should also include increased medical facilities in our cities for the better care of the citizens in urban areas."

LETTER FROM MR. MURRAY E. THOMPSON, REPUBLICAN CANDIDATE FOR GOVERNOR OF MISSOURI

"I am not an advocate or supporter of socialized medicine, and if successful in my candidacy certainly will not in any way advocate 'socialized medicine.' "

FIRST DISTRICT

Letter from Mr. Clare Magee, Democratic Candidate for Congress

"I have your letter of inquiry with reference to my stand on the Wagner-Murray-Dingell National Health Act.

"I might say, first of all, that I have two brothers and they both happen to be doctors. One of them was formerly an instructor at Vanderbilt University where he had previously graduated with the highest grades in fourteen years. Like most other doctors they are very bitter toward what they term 'socialized' medicine.

"Having been in service in two World Wars, I think I can see some of the disadvantages which would accrue under a bill of this kind. Just a day or two ago I saw a statement in the paper which stated that under this plan individuals could go to the doctor at any time they desired. In my judgment it would work about the same way that it worked in the army. The doctors got so tired of examining people who had no real complaint that they lost their patience and the examinations were often cursory. There is no doubt in my mind but that some who had real ailments were probably brushed off without an adequate examination.

"However I can see the other side of the picture. We must admit that millions of people today do not have suitable medical attention. It is a bad state of affairs when 34 doctors in one night refused to go on a call to see a sick woman in one of the western states and as a result she died. With all due respect to the medical profession, I do know that many people have been refused medical care because they could not pay a doctor bill. I know, again, that doctors have been unable to properly treat patients because those patients could not buy expensive drugs.

"I have no desire to see the medical profession 'nationalized.' Like attorneys, they are often called upon to render aid with no recompense in view. Under our state law, if a man is charged with a felony and he has no funds, we are required, if appointed by the court, to represent that man free of charge with the expense coming out of our pockets. If some plan were worked out whereby we were paid 50 per cent of our ordinary fee for all indigent people needing legal advice, I would be very well pleased and I would not consider that my profession was being 'nationalized' or that I was a puppet of the government. I think that the doctors of our country have rendered a great service—often beyond the call of duty. I can see no reason why a doctor should be called upon to render one fourth or one third of his services free. I would favor a plan which would in some manner make medical aid available to all people whether they had the funds to pay or not. I know that many doctors object to any theory whereby the government would pay a portion of that fee for taking care of those who are indigent; but I can't see that reasoning.

"I trust that some plan can be worked out which will not destroy the close relationship which exists between doctor and patient. Certainly we do not want medical men to become mere automatons. Certainly I want no plan that tells a patient he must go to one certain doctor.

"However I can frankly say to you that I am not satisfied with the present situation and I firmly believe that the time is not far distant when we must meet the problem in some manner."

Letter from Mr. Wat Arnold, Republican Candidate for Congress

"In reply to your two letters, I wish to state that

I am against the federal government embarking in a system of compulsory health insurance for the people of the United States or any of its territories.

"Some time ago, I wrote you a letter which you published in your magazine touching on this subject. This letter is to reinforce these views and tell you that I am well acquainted with some of the leaders in your profession and we are in entire agreement on the proposition.

"I hope this will answer your question and serve to inform your members my attitude toward compulsory health insurance."

SECOND DISTRICT

Mr. Morgan Moulder, Democratic Candidate for Congress

(No answer.)

Letter from Mr. Max Schwabe, Republican Candidate for Congress

"I am very much opposed to the compulsory health insurance. My father was an M. D."

THIRD DISTRICT

Letter from Mr. Phil J. Welch, Democratic Candidate for Congress

"In replying to your letter of September 22, 1948, for Mr. Phil J. Welch, Democratic candidate for Congress in the Third District of Missouri, he directs me to say he is opposed to any socialized medicine proposal.

"For any confirmation of Mr. Welch's position, he suggests that you communicate with any of the better doctors in St. Joseph."

Letter from Mr. William C. Cole, Republican Candidate for Congress

"I greatly appreciate this opportunity to state my position on the compulsory health insurance program, proposed by President Truman. Please record me as being unalterably opposed to this proposal, the so-called Murray-Wagner-Dingell National Health Act, and any other legislation that would tend to bring about socialized or state medicine. I have been on record in opposition to legislation of this type during my entire six years service as a member of the House of Representatives, and you and your organization may rest assured of my continuing opposition."

FOURTH DISTRICT

Mr. Leonard Irving, Democratic Candidate for Congress

(No answer.)

Letter from Mr. Richard A. Erickson, Republican Candidate for Congress

"I have given some attention to the bill that has been introduced into Congress and, also, to the general proposition which was first brought to my attention some eight years ago.

"I have always been a believer that the free enterprise system is the best for America and we should consider any proposition carefully which tends to abridge that which has become known as the American way of life. I believe that much of our medical progress has been due to the freedom enjoyed by your profession. Time will not permit me to elaborate upon the matter so I will simply say that we are making great strides in the care of the sick and ailing and I see no reason, at this time, for overhauling our fundamental system in the manner which would drag the medical profession down to the level of the socialist.

"From 1941 to 1943 I served as Referee of Missouri Workmen's Compensation Commission in Kansas City where I had daily dealings with the medical profession. That experience has made me sympathetic with your point of view."

FIFTH DISTRICT

Letter from Mr. Richard W. Bolling, Democratic Candidate for Congress

"In reply to your letter of September 22, I am enclosing a copy of the letter which I sent Dr. Vincent T. Williams in reply to a similar query. May I only add that a study of the bill in question convinces me that it is most misleading to describe the proposed plan as leading to socialized or state medicine. It seems to me that a more appropriate term is prepaid medicine.

"I am well aware that a great deal of misinformation is abroad on this subject and that much of the public is thoroughly confused."

Letter to Dr. Williams

"In answer to your letter of September 2, I must reply that I have mixed feelings with regard to the Wagner-Murray-Dingell Bill which was introduced in the last Congress. Although I am well aware that the quality and quantity of medical service in the United States is superior to that of nearly any other country in the world, my experience makes me believe that quite unnecessarily there are major segments of our population which receive inadequate or no medical services. This, as you know better than I, is revealed in a number of different ways, perhaps the most dramatic being the number of people rejected for the armed services during the past war for physical deficiencies which could have been corrected if treated promptly. Although I have made some study of various plans proposed, none has come to my attention which seems to me as likely to improve the health standards of the middle and lower income groups of the people of the United States as some such bill as the Wagner-Murray-Dingell Bill.

"I am well aware of the potential dangers inherent in such an act. However, a careful reading of the bill in question leads me to believe that it could be intelligently and adequately administered in such fashion as to infringe in no way on the rights and freedoms of the individual doctor or patient, hence having no tendency to lower the standards of practice. Until I am convinced of the existence of an alternative method to accomplish the necessary end, I will find it necessary to support the legislation in question.

"May I add in closing simply the fact that my father was a surgeon and my mother a nurse."

Mr. Albert L. Reeves, Jr., Republican Candidate for Congress

(No answer.)

SIXTH DISTRICT

Mr. George H. Christopher, Democratic Candidate for Congress

(No answer.)

Letter from Mr. Marion T. Bennett, Republican Candidate for Congress

"I am opposed to socialized medicine and I am opposed to President's Truman's proposal to establish it. I hope you will inform all of your members to that effect."

SEVENTH DISTRICT

Mr. Thomas A. Johnson, Democratic Candidate for Congress

(No answer.)

Letter from Mr. Dewey Short, Republican Candidate for Congress

"I believe the American system of individual initiative and free enterprise has contributed greatly to the success of our great nation. I have never favored socialized medicine and will not support legislation establishing such a system."

EIGHTH DISTRICT

Mr. A. S. J. Carnahan, Democratic Candidate for Congress

(No answer.)

Letter from Mr. Parke M. Banta, Republican Candidate for Congress

"I have read all of the arguments I have been able to, both for and against, what is commonly known as 'socialized medicine.' This does not mean I have exhausted the subject because there has been too much written and spoken regarding it which has not been available to me.

"Although I know that there is much truth in the statements of those who advocate it, statements to the effect that there is a shortage of doctors and nurses and that they are maldistributed so that many of our citizens find it difficult to obtain proper medical treatment, I am not convinced that anything will be gained by the adoption of a program for socialized or state medicine.

"I hope the great leaders in the medical profession can help us to find some other way to meet this problem."

NINTH DISTRICT

Mr. Clarence Cannon, Democratic Candidate for Congress

(No answer.)

Letter from Mr. Robert V. Niedner, Republican Candidate for Congress

"Thank you for your letter of September 22 with regard to the President's compulsory health insurance program.

"I am absolutely opposed to socialized medicine and I believe the President's program amounts to that.

"I am enclosing herewith a page from one of the newspapers in this district which I think indicates my opponent's position with regard to socialized medicine." *(Franklin County Tribune,* July 16, 1948.)

TENTH DISTRICT

Mr. Paul C. Jones, Democratic Candidate for Congress

(No answer.)

Mr. W. K. Dillon, Republican Candidate for Congress

(No answer.)

ELEVENTH DISTRICT

Letter from Mr. John B. Sullivan, Democratic Candidate for Congress

"I am unalterably opposed to socialized medicine. I have been unable to satisfy myself that this particular bill as now constituted does not embrace socialized medicine. Therefore, I am opposed to it.

"There are many of those in whom I have confidence that contend that this bill would be socialized medicine as well as others who contend it would not. I took my stand against this bill while I was a member of the 79th Congress and have found no reason to change my decision.

"The question of medical care and national health, as you recognize, is a most pressing problem. I am hopeful that a proper solution will be found quickly."

Letter from Mr. Claude I. Bakewell, Republican Candidate for Congress

"The Wagner-Murray-Dingell bill did not come before the House of Representatives at the last session so I am unable to express an opinion on this particular legislation. However, you may be sure that any bill which comes before us proposing any form of federal aid to medicine will have my most serious and conscientious study and appraisal before voting on it. I realize that any such proposals for federal financial aid to medicine must scrupulously and sacredly safeguard the time honored independent relationship between physician and patient."

TWELFTH DISTRICT

Mr. Raymond Karst, Democratic Candidate for Congress

By telephone, Mr. Karst stated that he is opposed to socialized medicine but has not had opportunity to study carefully the Wagner-Murray-Dingell Bill, which, he, at present, believes is not socialized medicine.

Letter from Mr. Walter C. Ploeser, Republican Candidate for Congress

"In reply to your inquiry of September 22 as to my position on socialized medicine, I want to make it clear that I have never been—or am not now—an advocate of state socialization in this or any other form.

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From where I sit *by* Joe Marsh

Sam's Hens Wear Spectacles!

Yes, it's a fact! Sam's brood of two dozen hens are wearing spectacles —which he bought from a mail-order house in Capitol City.

Sam says it works (and big poultry raisers say so, too). The hens see each other through soft colored glasses, and instead of fighting and picking at each other, they're placid, gain weight, and lay more eggs.

Makes me almost wish we could have rose-colored glasses for human beings, too. So that instead of quarreling and criticizing, like we generally do so much of the time, we'd simply live and let live in contentment.

From where I sit, the human race wastes a powerful lot of time in wrangling over minor issues . . . whether a man should drink beer or cider . . . whether a woman should wear slacks or skirts . . . instead of seeing each other through "spectacles" of tolerance that enable us to live-and-let-live like Sam's brood of chickens.

Joe Marsh

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"You can be sure that such an attempt to regiment the people and kill individual initiative and accomplishment will not receive my support but, instead, my vigorous opposition."

THIRTEENTH DISTRICT

Letter from Mr. Frank M. Karsten, Democratic Candidate for Congress

"As I recall, I furnished the Missouri State Medical Association with a statement of my views on this matter a year or two ago. I am, and have always been, opposed to socialized medicine. It has always been my view that a physician owes a duty to his patient. This relationship has existed from the earliest times. Socialized medicine would destroy the relationship by placing an intermediary between the physician and his patient. This might eventually place medicine on an assembly line basis, and I certainly would be opposed to any such a program.

"The Wagner-Murray-Dingell Bill, which you mention, has been before the Congress for many years. It is one of the most highly controversial bills that has ever been presented and the proponents contend that it is not socialized medicine. I have given considerable study to the bill and, as I see the measure, it is a broad step into the field of socialized medicine. In view of this, I do not feel I could support the legislation if it is ever brought to a vote."

Letter from Mr. Charles McBride, Republican Candidate for Congress

"I am in receipt of your letter asking my opinion, relative to socialized and state medicine.

"I feel that legislation of this kind would be detrimental to the medical profession and to the citizens of the United States, and I assure you that I am unalterably opposed and will oppose in the future the socialization of medicine in this country."

MUSINGS OF THE FIELD SECRETARY

If one subscribes to the oft repeated statement that there is a shortage of physicians in this country and that many people are not getting adequate medical care, should not one wonder a bit what happened to the patients during the time many doctors were on vacation this summer—did some of them get along without medical care (needed or not needed) or is someone, maybe, trying to make a mountain out of a mole hill on this supposedly doctor shortage situation? It is reasonable to assume that in certain localities additional physicians are needed but the cry of "wolf" needs more justification. Considerable detailed information is on hand in the Association office concerning the medical manpower situation in this state. This information, plus additional general knowledge of various communities in Missouri, points to some possible locations well worth further investigation by those interested in establishing a practice or those desiring a change of location.

ORGANIZATION ACTIVITIES

THE COUNCIL

The Council met at the Sheraton Hotel, St. Louis, on September 25 and 26, with J. W. Thompson, St. Louis, Chairman, presiding. Those present were H. E. Petersen, St. Joseph; W. F. Francka, Hannibal; J. W. Thompson, St. Louis; Otto W. Koch, Clayton; J. F. Jolley, Mexico; R. W. Kennedy, Marshall; W. S. Sewell, Springfield; E. C. Bohrer, West Plains; Frank W. Hall, Cape Girardeau; Robert Mueller, St. Louis; Wallis Smith, Springfield; C. E. Hyndman, St. Louis; W. A. Bloom, Fayette; R. E. Schlueter, St. Louis; W. L. Allee, Eldon; Howard B. Goodrich, Hannibal; Ralph E. Duncan, Kansas City; A. N. Altringer, Kansas City; M. Pinson Neal and Trawick H. Stubbs, Columbia; Llewellyn Sale, St. Louis; E. C. Ernst, St. Louis; Mr. D. E. Caywood, Springfield; W. H. Bartleson, Kansas City; Raymond McIntyre and T. R. O'Brien, St. Louis.

The minutes of the last meeting were approved.

The situation on the work toward a four year medical school was reviewed and it was announced that Dr. Stubbs, now Dean of the School of Medicine of the University of Missouri, would be present at the Council session. This was discussed by Drs. Thompson, Kennedy, Smith and Bloom.

Upon arrival, Dr. Stubbs was introduced to the Council by Dr. Neal. Dr. Stubbs spoke informally to the Council stressing the fact that the state is in need of postgraduate education and suggesting that this could be worked out through hospitals throughout the state. He said in regard to the location of a possible four year medical school, that he felt the Board of Curators of the University thought the university would be weakened by placing a part or all of the medical school at another location. He said that the main purpose of the University, in any branch, was to serve the people and that if the Board of Curators and the medical profession could not come to some agreement that the serving of the people would suffer. He stressed again the enlarging of education at the graduate level and that that did not necessarily mean centralization but integration. This was discussed by Drs. Thompson, Altringer, Sewell, Francka, Petersen, Jolley, Bloom, Hall, Mueller. It was the concensus of the Council that they would desire a conference with the Board of Curators if the discussion was not based on the definite location at Columbia.

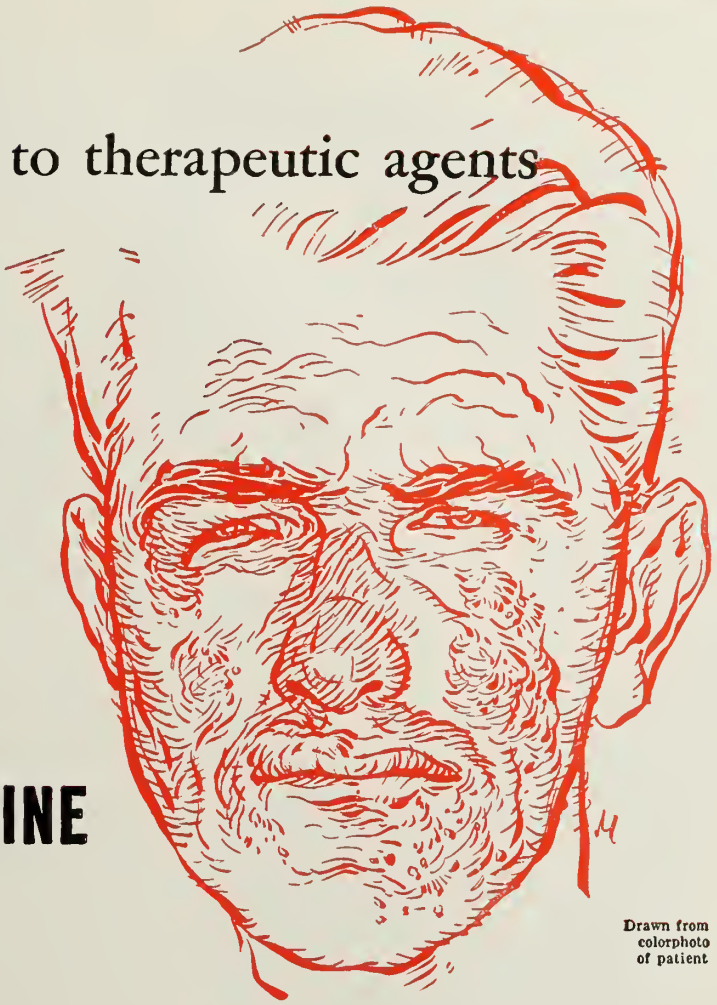
The report of the Committee on Public Policy and Public Relations was read. It was requested that copies of this report be sent to Councilors and that action be delayed until the next meeting of the Council. It was pointed out that some of the work which the report called for immediately was being done as a routine procedure.

It was announced that Dr. Smith had been made chairman of a committee on clean streams and that several physicians in the state had been made members of the committee.

A resolution from the American Medical Association recommending that expenses of the Woman's Auxiliary be taken over, thus making dues in that organization unnecessary and automatically making every physician's wife a member, was read. Upon motion, this was referred to the Woman's Auxiliary for their advice.

The problem of a laboratory in Kansas City which was not directed by a qualified person was presented and discussed. It was pointed out that the American

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Medical Association has stated that the practice of laboratory medicine is the practice of medicine. It was decided that the problem was really one of physicians referring work to these laboratories.

Mr. O'Brien read an announcement of a regional south central conference on medical service which will be held in Tulsa, Oklahoma, on November 13 and 14 and said that Missouri had been invited to be represented on the program. Upon motion it was left to the Chairman of the Council to handle.

The elimination of the office of coroner and the establishment of medical examiners was discussed. It was pointed out that this would take legislation and that it was understood that work on this is underway.

A letter and information was presented outlining a proposed organization of practical nurses and asking endorsement by the Council. After discussion it was decided that the Council should follow action by the Missouri State Nurses Association and action was delayed.

Mr. McIntyre reported on work in the various parts of the state since the last meeting of the Council. It was brought out that many societies are now consistently active and that meetings are being well attended. Councilor District meetings were announced, the Fifth District at Fulton on October 14; the Sixth District at Sedalia on October 18, and the Eighth District at Mount Vernon on October 21.

The Treasurer reported the Association in sound financial condition. Upon motion, his report was accepted.

Dr. Kennedy asked Mr. McIntyre to report on the newly formed Missouri Health Council. Mr. McIntyre told of the two organizational meetings last October and February and of a meeting in July when a constitution and by-laws were adopted and officers elected. He said the council would assist in the establishing of health councils in counties and proposed to set up a pattern for local health councils. He pointed out that the state organization was purely a conference body but that the councils in the counties would be action bodies.

The program for the 1949 Annual Session was outlined as follows: Monday morning, March 28, a symposium on "Coronary Disease"; Monday afternoon a program on mixed subjects based on subjects suggested by members; Tuesday morning, another program of mixed subjects; Tuesday afternoon, a panel on "Trauma" and on Wednesday morning a symposium on "Obstetrics."

Dr. Francka reported for the Committee on Awards. He stated that since the time is so short for the submission of names for the A. M. A. award to an outstanding general practitioner, the suggestion was made that each Councilor select a physician from his district for the Committee to select from. It was suggested that an award be given by the state to the person selected. It was recommended that each county be given opportunity of proposing a candidate for the lay award. It was recommended that each physician who has practiced fifty years in the state be presented an appropriate pin. Upon motion, the report was adopted.

Dr. Schlueter reported on the work that is being done in preparation for the Interim Session of the American Medical Association, giving the names of chairmen of committees and the subjects to be covered in the scientific session.

Mr. O'Brien announced a conference on public relations on November 27 and a secretaries-editors conference on November 28 and 29 in connection with the session.

Dr. Goodrich gave a thorough outline of the work done by the House of Delegates including action on the resolutions presented by Missouri Delegates. He said that the reason given for the change of hospital and medical and surgical coverage from Blue Cross for A. M. A. employees was that there was not a society sponsored medical plan available. The result was that this coverage will be changed at the expiration of the present contract and that medical coverage will be available by that time.

Dr. Allee elaborated on this report and Dr. Schlueter discussed the resolution presented in regard to the practice of medicine by hospitals and medical schools. He read the recommendations of the Committee on Hospitals and the practice of medicine as follows:

"Because of the difference in the laws of the various states, your Committee recommends that the Bureau of Legal Medicine and Legislation of the American Medical Association be instructed immediately to make a study of the various state laws defining the legal status of corporations attempting to practice medicine in the various states, defining in each instance the differences in the various state laws concerned with this problem, and that, if necessary, legislation be prepared by the Bureau of Legal Medicine and Legislation which will define all of these matters so that uniform legislation to simplify legal interpretations may be prepared and supported by the American Medical Association to insure the legality of the actions taken.

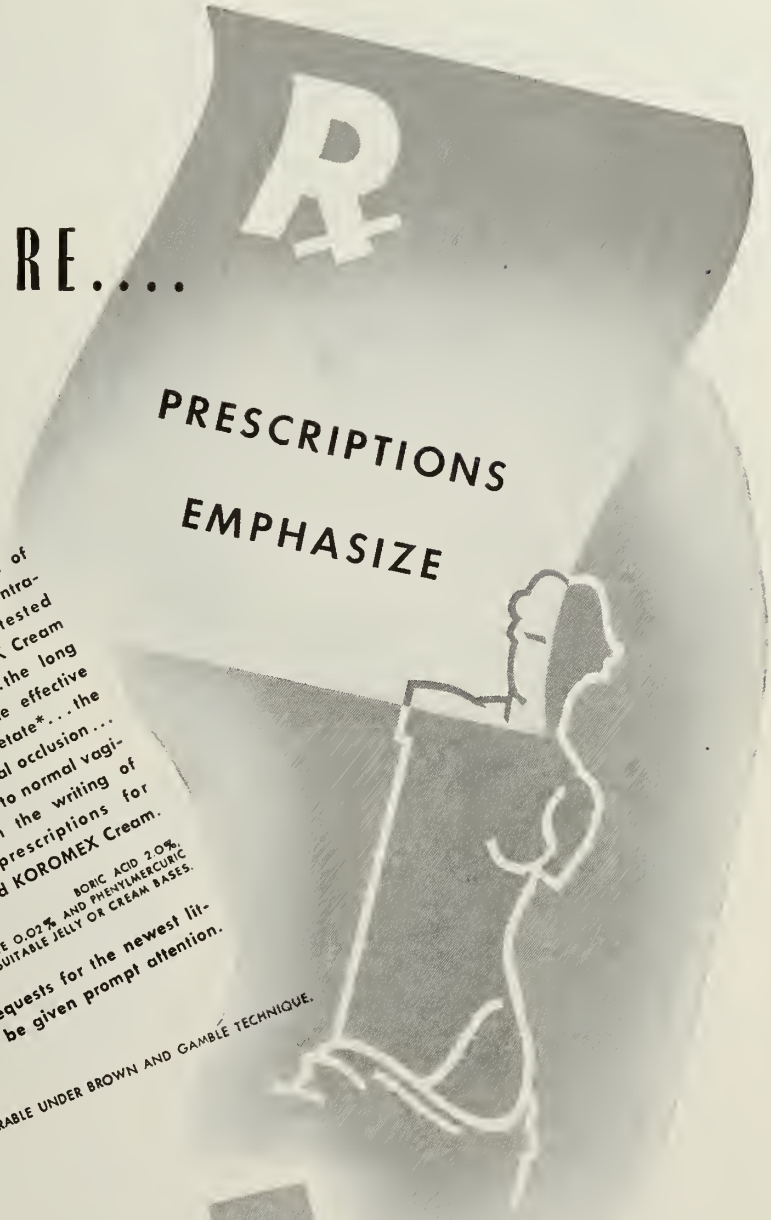
"That the House of Delegates request the Board of Trustees to send within the next six weeks an official communication to medical schools and hospitals informing them of the principles and policies of the House of Delegates concerning the practice of medicine by institutions and stating that the American Medical Association will be glad to cooperate in every way with such institutions and appealing to them for immediate cooperation in the general over-all plan and for assistance in the preservation of the private practice of medicine."

Upon motion the reports were accepted with thanks and the Delegates were requested to introduce a resolution which would clarify attendance at executive sessions of the House of Delegates of the American Medical Association.

Dr. Sale, chairman of the committee to study the plans of other states in regard to medical-legal testimony, reported on the Minnesota Plan which was inaugurated in 1940 whereby a committee was set up by the Minnesota State Medical Association which would study transcripts of any testimony which was questioned. The committee has no jurisdictional power except to pass on the transcript to the board of medical examiners if it felt drastic action was needed; otherwise conferences with the physician testifying were held. He said that until 1943 the names of physicians whose testimony was being studied were made public but since that time the names had been withheld. In 1940 there were fifteen cases in Minnesota, in some years there has been none and so far in 1948 there have been two. The cost has been approximately $500.00, this being mainly used in paying for the transcripts. Dr. Sale said that the committee in Missouri would work with the Bar Association and that a further report would be given.

Dr. Ernst, chairman of the Committee on Cancer, reported briefly on the work of the Missouri Division of

MORE AND MORE....

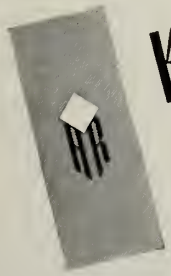


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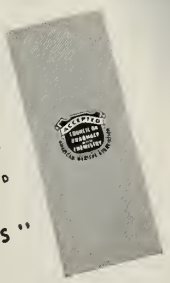
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the American Cancer Society. Mr. George Larson, executive secretary of the Missouri Division, was introduced to the Council.

It was asked that the Council agenda carry some notation concerning the items to be discussed.

The Community Health League was discussed briefly as to its continuance. It was the feeling that it should be continued and upon motion of Dr. Jolley, it was voted to continue the Community Health League with closer cooperation between the League and the Council.

Dr. Mueller asked the approval of the Council in giving talks in the state against compulsory medical service. This approval was given.

COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION

The Committee on Health and Public Instruction has a number of well qualified speakers to be sent out to the various county medical societies.

The purpose of this Committee is to have meetings with the public under the auspices of the various county medical societies. It is time that physicians meet with the public and address them on several problems in state medicine.

The Association office or any member of the Committee will welcome an opportunity to be of service.

A. W. McAlester, III, M.D., Kansas City, Chairman,
M. K. Underwood, M.D., Rolla,
B. E. DeTar, M.D., Joplin,
Joseph Conrad, M.D., Chillicothe,
Grayson Carroll, M.D., St. Louis.

MISCELLANY

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for November and December, to which all members are invited, beginning at 1:00 p. m. each clinic, follows:

November 3: Miscellaneous.
November 5: Gynecology and Genitourinary.
November 10: Skin.
November 12: Breast.
November 17: Gastrointestinal.
November 19: Cervix.
November 24: Skin.
November 26: Head and Neck.
December 1: Miscellaneous.
December 3: Gynecology and Genitourinary.
December 8: Skin.
December 10: Breast.
December 15: Gastrointestinal.
December 17: Cervix.
December 22: Skin.
December 24: Head and Neck.
December 29: Miscellaneous.
December 31: Miscellaneous.

SOCIETY PROCEEDINGS

SECOND COUNCILOR DISTRICT

W. F. FRANCKA, HANNIBAL, COUNCILOR

North Central Counties Medical Society

The North Central Counties Medical Society met at the residence of Dr. Warner Herington, Green City, on October 7 and members were the guests of Dr. and Mrs. Herington for dinner.

Minutes of the September 2 meeting were read and approved.

Drs. Ida M. Nulton, Lancaster, and Clifford E. Henry, Kirksville, were nominated to the 50 Year Club.

R. P. Ladenson, M.D., Columbia, read a paper on "The Heart in the Aging."

James W. Allee, M.D., Columbia, spoke on "Why a Doctor's Heart."

The subjects were well handled and were of personal interest to many of the members who are advanced in years. A vote of thanks was given the essayists.

Those present were Drs. Allee and Ladenson, Columbia; Ralf Hanks, S. L. Freeman, R. O. Strickler, Clifford E. Henry, M. T. English, John B. Jones, George E. Grim, Kirksville; H. T. Garrison and J. S. Gashwiler, Novinger.

J. S. Gashwiler, M.D., Secretary.

FIFTH COUNCILOR DISTRICT

J. F. JOLLEY, MEXICO, COUNCILOR

Cole County Medical Society

On the evening of October 1, 1948, a combined dinner meeting of the Cole County Medical Society and the Cole County Dental Society was held at the Jefferson City Country Club with seventy-five members and their wives in attendance.

Mr. William Crowdus, Professor of Medical Jurisprudence at Washington University, presented an enlightening program entitled "Legal Pitfalls of the Medical and Dental Profession."

The American Red Cross National Blood Bank plan was endorsed by the Cole County Medical Society with the following provisions: (1) Local control of blood banks must rest with the county medical society. (2) The local medical society should be contacted when a new blood bank is first contemplated. (3) No publicity is to be released except by mutual consent of the local medical society and of the local Red Cross chapter. (4) Differences of opinion should be arbitrated by joint committees from the state medical society and from the American Red Cross.

G. Donald Shull, M.D., Secretary.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central Counties Medical Society

The South Central Counties Medical Society met at the Antlers Cafe, Mountain Grove, for dinner on September 17, with the following members and visitors present: L. T. VanNoy, M.D., Norwood; R. A. Ryan, M.D., H. G. Frame, M.D., and A C Ames, M.D., Mountain Grove; Garrett Hogg, M.D., Cabool; T. J. Burns, M.D., Houston; C. F. Callihan, M.D., E. C. Bohrer, M.D., and Rollin H. Smith, M.D., West Plains; C. W. Cooper, M.D., Thayer; Carter W. Luter, M.D., Butler; Everett



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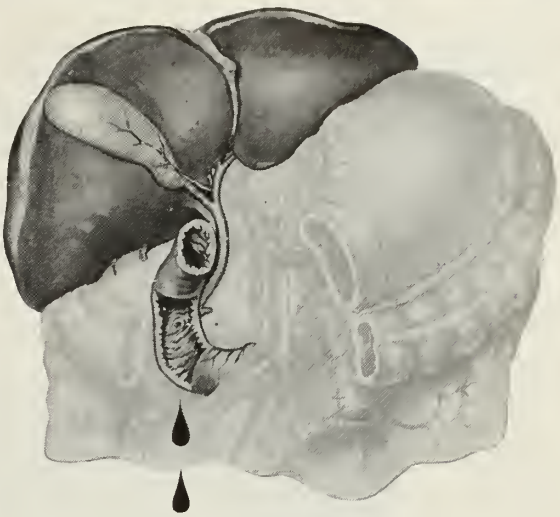
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*Albrecht, F. K.: Modern Management in Clinical Medicine, Baltimore, The Williams and Wilkins Co., 1946, p. 170.

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*Downing, J. G., Hanson, M. C. and Lamb, M.: Use of 5-Nitro-2-Furaldehyde Semicarbazone in Dermatology, J. A. M. A. *133*:299, 1947. • Shipley, E. R. and Dodd, M. C.: Clinical Observations on Furacin Soluble Dressing in the Treatment of Surface Infections, Surg. Gynec. & Obst. *84*:366, 1947. • Miller, J., Rodriquez, J. and Domonkos, A.: Evaluation of Penicillin in Topical Therapy, New York State J. Med. *47*:2316, 1947.

D. Sugarbaker, M.D., and Edward R. Bohrer, M.D., Jefferson City.

After dinner the meeting was called to order by Dr. Callihan, the president, in the office of Dr. Ryan.

Dr. E. R. Bohrer discussed some of the newer methods of treatment of syphilis.

Dr. Sugarbaker spoke on "Cancer," including carcinoma and sarcoma, showing the hopeful prospect when taken in time and some of the reasons for failure when too late or too conservative treatment is undertaken.

Dr. Callihan expressed the thanks and appreciation of the Society to the speakers.

The minutes of the last meeting were read and approved.

A letter was read from the family of Dr. Hogan expressing appreciation for the flowers the Society sent.

Dr. Callihan asked the Society to approve the affiliation of the Crista Hogan Hospital with Blue Cross, which was done.

Dr. Burns was asked to secure speakers for the next meeting to be held in Cabool on October 15.

A. C. AMES, M.D., Secretary.

TENTH COUNCILOR DISTRICT

FRANK W. HALL, CAPE GIRARDEAU, COUNCILOR

St. Francois-Iron-Madison-Washington-Reynolds Counties Medical Society

The St. Francois-Iron-Madison-Washington-Reynolds Counties Medical Society was host to fifty-three physicians from the Tenth Councilor District at Farmington on September 23 for a dinner meeting at State Hospital No. 4. S. C. Slaughter, M.D., Fredericktown, president, presided.

Eugene Bricker, M.D., St. Louis, spoke on "The Differential Diagnosis of Acute Abdominal Emergencies."

Robert Mueller, M.D., St. Louis, President of the Association, spoke on "The Problem of Medical Relations." This was discussed by several.

Guests were introduced including Frank W. Hall, M.D., Cape Girardeau, Councilor of the District.

Communities represented at the meeting were Poplar Bluff, Caruthersville, Charleston, Chaffee, Cape Girardeau, Jackson, Centerville, Ellington, New Madrid, De-Soto, Perryville, Farmington, Flat River, Bonne Terre, Desloge, Festus, Crystal City, Sikeston, and St. Louis.

F. R. CROUCH, M.D., Secretary.

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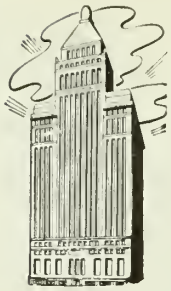
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Teamwork is simply working together to turn out more goods in fewer man-hours—making things at lower costs and paying higher wages to the people who make them and selling them at lower prices to the people who use them.

What we've already accomplished is just a foretaste of what we *can* do. It's just a start toward a goal we are all striving to reach: better housing, clothing, food, health, education, with ever greater opportunities for individual development. Sure, our American System has its faults. We all know that. We still have sharp ups and downs in prices and jobs. We'll have to change that—*and we will!*

It will continue to take *teamwork*, but if we work together, there's no limit on what we can all *share together* of even greater things.



What we have already accomplished is just a foretaste of what we *can* do—if we continue to *work together!*

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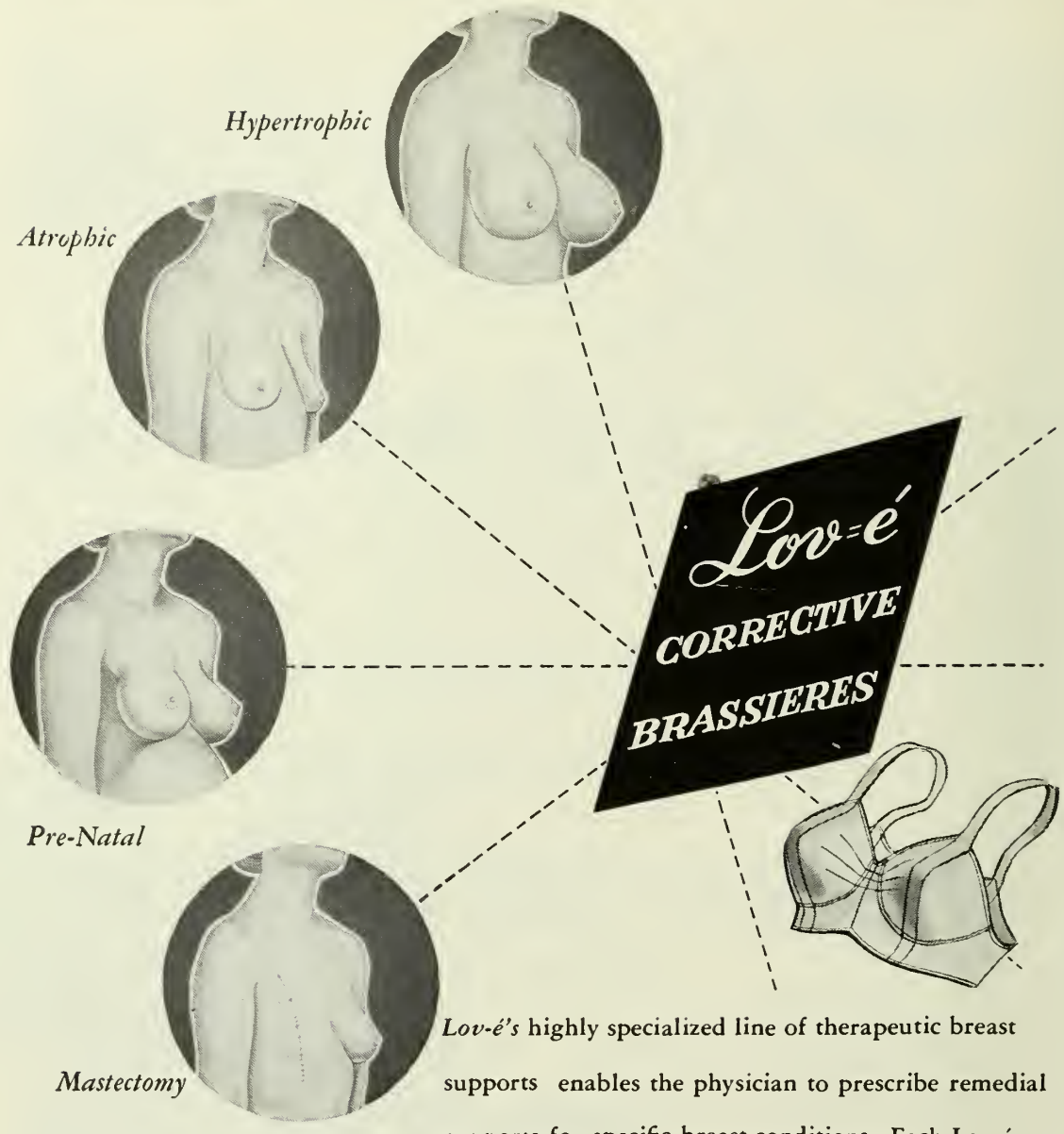
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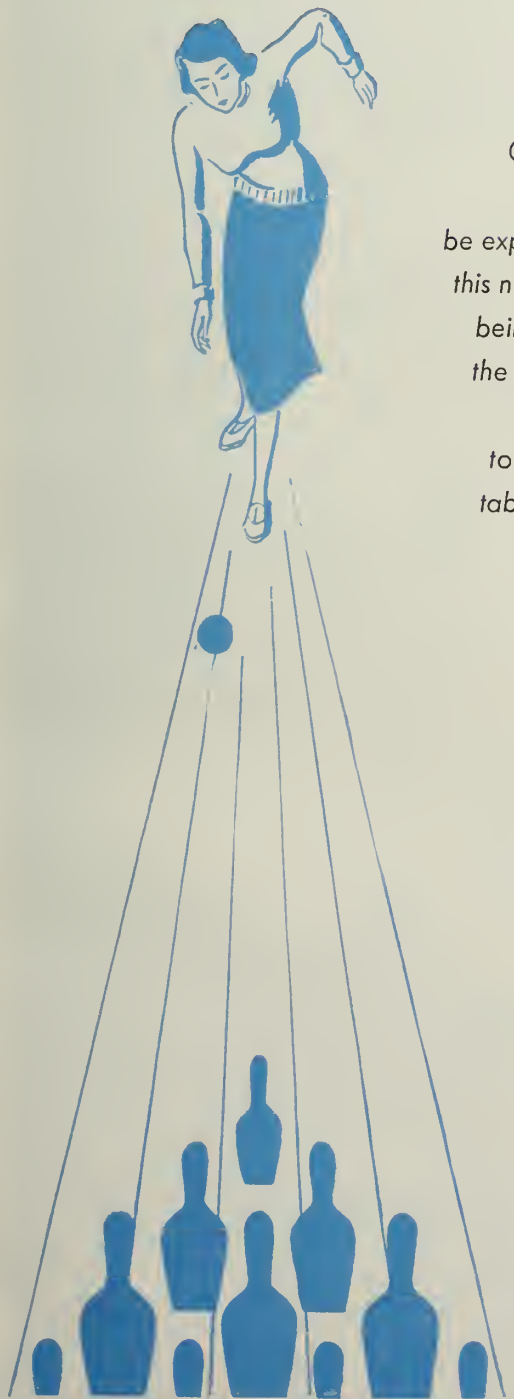
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Entered as Second-Class Matter, February 18, 1925, at the Post Office at Fulton, Mo., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1003, Act of October 3, 1917, authorized July 30, 1918. Business Office, 1201-5 Bluff St., Fulton, Mo., and 623 Missouri Building, St. Louis, Mo., Editorial Office, 623 Missouri Building, St. Louis, Mo. Return postage guaranteed. Printed by The Ovid Bell Press, Inc., Fulton, Mo.

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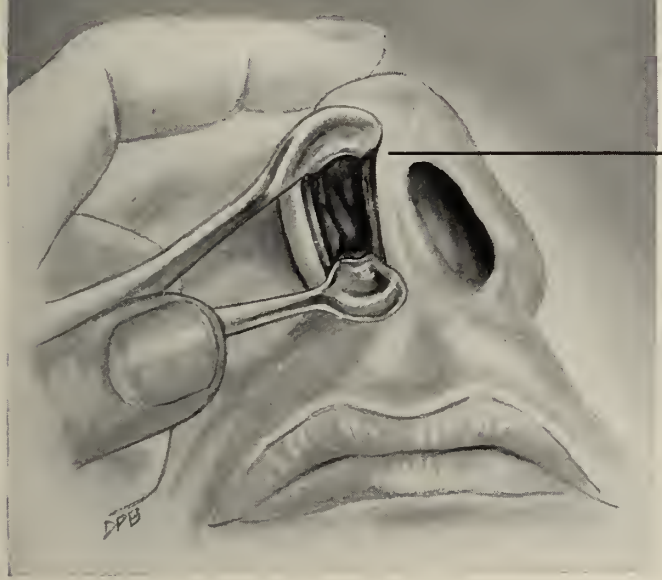
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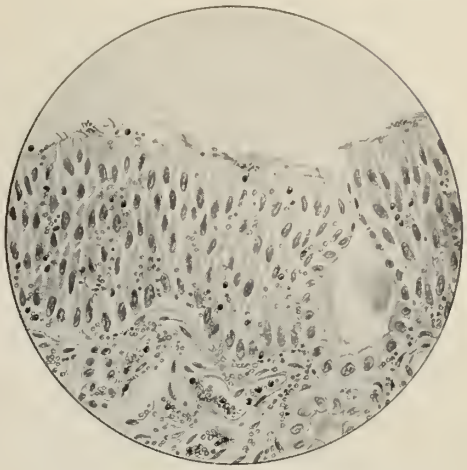
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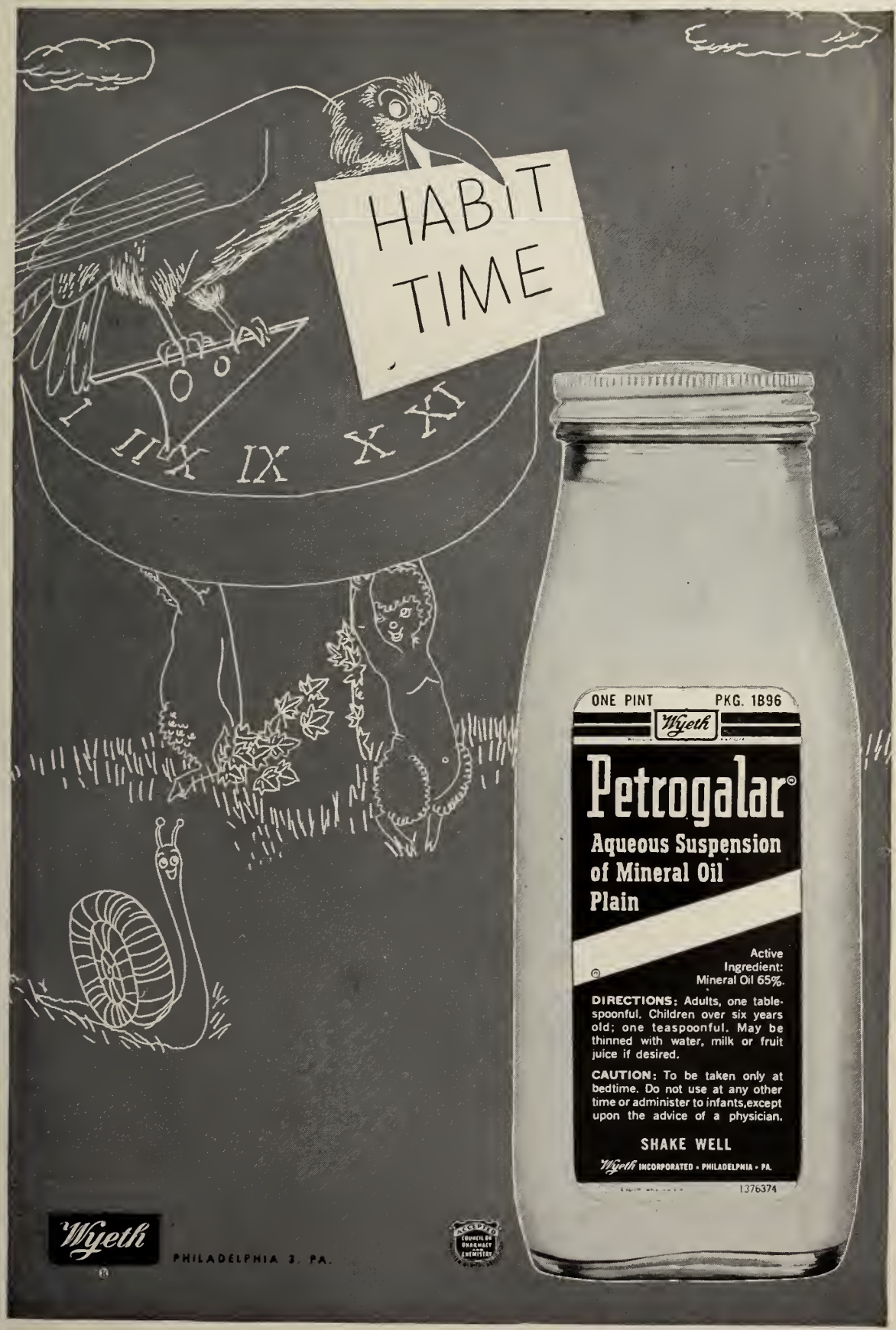
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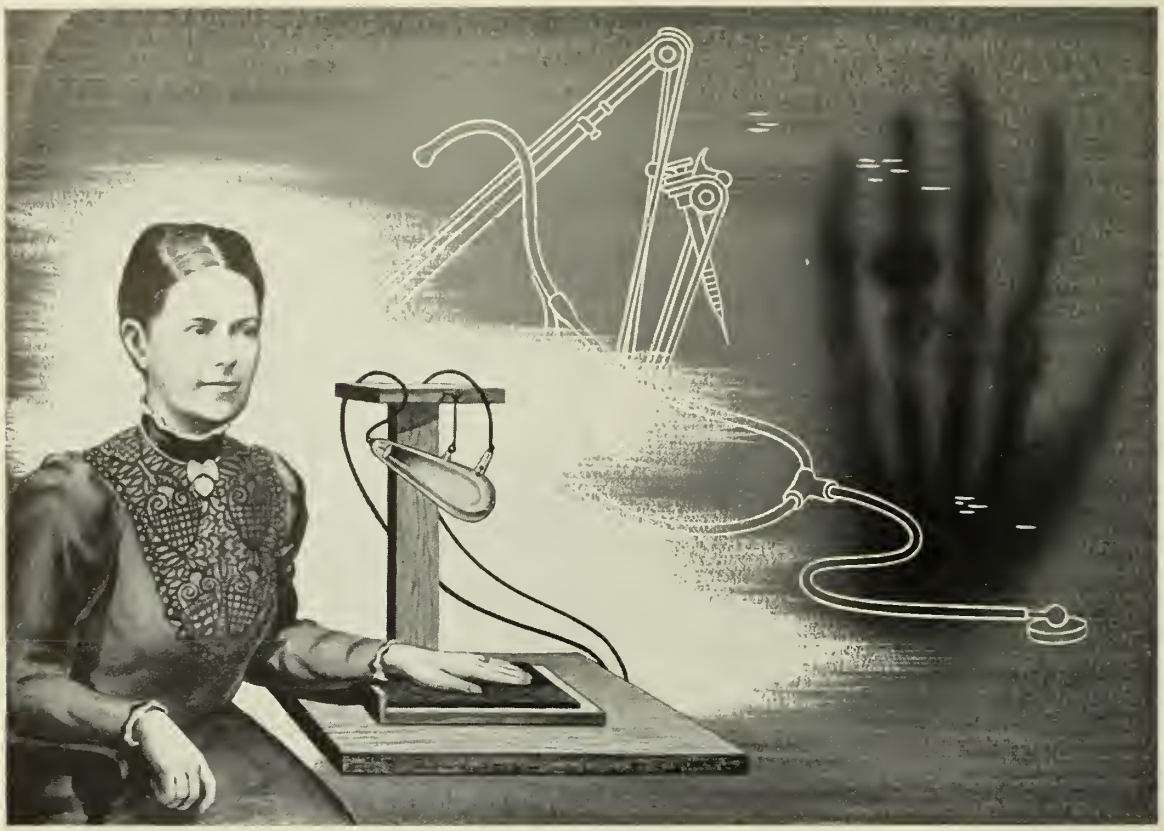
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THE JOURNAL

OF THE

Missouri State Medical Association

The Official Organ of the State Association and Affiliated County Societies
Issued Monthly under direction of the Publication Committee

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VOLUME 45 **DECEMBER, 1948** NUMBER 12

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SYMPOSIUM ON PEDIATRICS

GARRETT HOGG, M.D., *Cabool,* Moderator

PANEL

H. E. PETERSEN, M.D., *St. Joseph*
CALDWELL K. HAMILTON, M.D., *St. Louis*
C. T. HERBERT, M.D., *Cape Girardeau*
JACKSON ETO, M.D., *St. Louis*

GARRETT HOGG, M.D., Cabool: This program has been requested by the general practitioners of the Association. It is not a paper or discussion of scientific problems. It is merely the answer to what is believed the general practitioner needs to help him to practice pediatrics in his own community. Dr. Shaw will be the moderator of the second panel and he has promised me faithfully to have answered any questions that these four pediatricians cannot answer during the first session. Cards will be passed out for questions to be presented.

The first panel will consist of the following classification: infectious diseases, infant feeding, the Rh factor in blood dyscracias and endocrine and metabolic disturbanes. Naturally, the most of our time will be taken up with the first two classifications, infectious diseases and infant feeding.

I am going to ask Dr. Petersen the first question. What are the relative merits of the sulfonamides and penicillin in the treatment of acute follicular tonsillitis, otitis media and other upper respiratory infections?

H. E. PETERSEN, M.D., St. Joseph: I think the role of sulfa for use in upper respiratory infections, thinking of tonsillitis, is well known. What is not followed strictly enough is the accepted recommendation as to dosage, that is, full dosage should be given from the beginning of the infection, a grain of sulfa per pound of body weight per day, divided into six doses and given at four hour intervals. I think it is extremely important that at least a grain per pound of body weight be given. It is well known that children stand larger doses of sulfa than adults and with fewer complications such as blocking of the kidney. As for sulfonamides in the ordinary cold, I think its use is to be greatly condemned, that is, the indiscriminate use of sulfas in ordinary respiratory infections because they are self limited anyway. One should know the indications and use the drug properly in large enough doses.

The same remarks go for penicillin. Many doctors use penicillin in inadequate doses to begin with and then, after the patient starts to show improvement, follow a process of tapering off. I think this tapering off process also should be condemned. The penicillin should be given in large doses and given until the patient is well, and then stopped. I would condemn the use of sulfas frequently for mild upper respiratory infections or for children subject to frequent colds the year around.

DR. HOGG: One minute will be allowed at the end of each question for any of the members of the panel who wish to discuss each question. Does any one care to remark or elaborate on this question?

CALDWELL K. HAMILTON, M.D., St. Louis: I would like to emphasize further what Dr. Petersen said about the routine treatment of cold. With little temperature, nasal discharge and cough, the use of sulfa is to be condemned. I think it has become a habit to just use sulfa without seeing the patient and that with the ordinary type of upper respiratory condition the use of sulfa can get one into an awful lot of difficulty.

Presented before the 90th Annual Session, Missouri State Medical Association, St. Louis, March 14-17, 1948.

Dr. Hogg: Our next question is for Dr. Hamilton. Describe the treatment of simple croup, with particular attention to medication used in a home with crowded conditions which make it impossible for an ideal regime for treating. The medication is the main discussion that this member wishes to have answered.

Dr. Hamilton: For the simple type of croup seen in the home, I think that any sort of arrangement, using the doctor's ingenuity, to set up a vaporizer or a croup tent, is an ideal type of treatment, and I do not think that drugs are necessary at all. I am talking about the croup that comes on at night, the youngster has no temperature and the parents are terrified. They believe the youngster is going to choke to death. Oftentimes the youngster vomits and this choking and croup are relieved. There are a lot of substitutes for croup tents. Instruct parents in the homes to use an ordinary teakettle on the floor beside the bed, full of hot water that is steaming, and replacing when the steam stops. I do not think tincture of benzoin does much good at all. I do not think sulfa, penicillin or any kind of drug therapeutics particularly helps the croup, but the vaporizer and the steam will do the trick.

I do want to say something here that is a little bit off of simple croup, but is an important thing. There is a severe condition, laryngeo tracheobronchitis, which sometimes is confused with croup. These youngsters will run unusually high temperatures, the condition does not commonly start at night and the youngster may have a laryngeal obstruction. This has been confused with croup with serious results. This type of child needs, if one can, hospitalization and perhaps an emergency tracheotomy, large doses of penicillin and sulfa, and I mention it here because it has been confused with the simple croup. But ordinary croup comes on at night, the child is usually better in the morning and can be relieved by any makeshift vaporizer that one can help the parents construct.

Dr. Hogg: The next question is to discuss briefly the treatment of acute nephritis with regard to diet, fluid intake, salt restriction, drugs and general care. Dr. Herbert, will you answer that, please?

C. T. Herbert, M.D., Cape Girardeau: I am glad I got a question on something on which the treatment is so definitely settled. The question of acute nephritis is always one of a serious situation. To me it is almost a calamity. I do not know whether any have any better luck than I do, but if you do not, you are kind of bad off.

Following this last measles epidemic, I have had three cases of acute nephritis. If a nephritic patient is just having some red cells and a few casts with no edema and no distress as far as oxygen want is concerned, that is not such an emergency. But if the child is edematous and needs oxygen, one should try to get in oxygen and one has to remove the edema. In the first place, restrict fluid. I may be condemned for this, but years ago Dr. Mitchell taught me to use 2 per cent magnesium sulfate intravenously, if I can get them to lie down long enough to give it. If I am able to get in the vein, I give the magnesium sulfate intravenously. Sedate and quiet them as much as possible, not with morphine, but if they are able to take the sulfate by mouth, one can give them magnesium sulfate, 50 per cent solution, until diarrhea develops and then stop it. So much for the fluids.

Remember that amigen or any of the other protein preparations are contraindicated in nephritis.

Then there is the question of salt-free diet. I instruct mothers to use a salt-free diet, and I mean by that they wash the butter and bake the bread and as much as one can, keep the child on a salt-free diet. They are losing proteins, so increase proteins, meat, beef, veal and chicken. Push proteins as much as possible by mouth, but at first the nephritic is not going to eat. He cannot, because he is sick, so one has to tide him over as best one can, but remember protein substitute should not be given intravenously or subcutaneously.

Next, drugs and general care. There is already kidney damage, so I do not believe in sulfa drugs for this. Penicillin, if there is any secondary infection, certainly is indicated. Give penicillin in big doses, as Dr. Petersen said, until through with it and then stop it. The question of sensitivity to these drugs will be discussed, I am sure, at a later date, so I will not mention that. Urine specimens, nonprotein nitrogen and blood pressure should be checked daily. Magnesium sulfate will certainly help if the child is having convulsions. It is amazing how much magnesium sulfate these children can tolerate, up to many ounces, before they start getting a diarrhea. It takes from weeks to months and then attacks are prone to recur, and one has to watch for other recurring infections and use penicillin and try to keep them from getting an infection until the child is better. I try to keep my patients down until they are free of fever, are gaining weight and not having any edema and not losing any blood in the urine.

Dr. Hogg: I would like for Dr. Hamilton to discuss this question briefly: what about cold applications in spasmodic croup?

Dr. Hamilton: I have never used cold applications in spasmodic croup. It seems to me, just thinking about it here, that trying to keep cold applications around the throat is quite a difficult job and along with trying to use the vaporizer too, I do not think it would be too successful. I have had no trouble with the spasmodic croups by just using the vaporizer alone.

Dr. Hogg: Dr. Eto, will you please discuss the treatment of acute urinary tract infections?

Jackson Eto, M.D., St. Louis: In treating acute urinary infections, I think the first thing that one should do is to keep in mind any possibility of the presence of congenital anomalies. Of course, I realize one cannot do extensive genito-urinary studies on every first case of genito-urinary infection. But if the infection does have a tendency to recur at

later dates, then certainly this should be considered seriously.

In a first attack, most infections, I think, respond well to sulfonamides, especially sulfadiazine. I notice that genito-urinary men have a tendency to use low dosages, and they think the dosages by the pediatricians is pretty large; but I think at least it should be started at 1 grain per pound per day and divided into six doses. Albuminuria and the pyuria clears up pretty well.

DR. HOGG: Here is another question about croup. Dr. Hamilton, what about calcirine?

DR. HAMILTON: I have never used it with croup. Perhaps I have not had one that was severe enough, but I found no medication necessary and I am entirely satisfied with the vaporizer.

DR. ETO: Could I ask something about croup, too? Do you ever use sulfa on croups?

DR. HAMILTON: No, I have never used sulfa in croup. I do not use it unless there is a laryngeotracheobronchitis, which is a serious disease. Until we had the use of sulfa and penicillin, this had a high mortality. The child definitely has laryngo obstruction and obviously is toxic and is extremely sick and needs emergency care. But I have never used sulfa nor penicillin orally, or calcidin, in croup.

DR. HOGG: Dr. Petersen, there have been several questions submitted about the relative effect of the triple sulfas, that is sulfadiazine, sulfamerazine and sulfathiazole, combined in comparison to the individual drug. Will you briefly comment on that?

DR. PETERSEN: It does not make any difference except in a child that possibly has been given sulfas over a long period of time for some previous illness or in a child that has developed an idiosyncrasy to one of them, a bloody urine or skin rash. In that case it is an advantage to use the combined sulfas. There is no disadvantage to using the three preparations together and there can be some great advantages in using them together in certain cases. I do not mean to say that routinely one needs to use the double or triple sulfas.

Could I amplify on the question I answered earlier? In the use of sulfas and penicillin, particularly penicillin, there is an easy and simple way of determining organism susceptibility to penicillin; that is, whether or not the organism present, without waiting for culture, will respond to the use of penicillin; and that is the use of a blood agar plate. Streak a blood agar plate with culture and place a piece of filter paper saturated with penicillin over the culture. If it is susceptible to penicillin, of course, the organism will be destroyed on the agar plate. It is a simple little test that one can perform without going through the routine of culturing and so on.

DR. HOGG: Dr. Hamilton, here is a question addressed to you: What is your opinion of the use of penicillin in oil or wax in the home for the more serious diseases of childhood as pneumonia?

DR. HAMILTON: I think penicillin in oil or wax, as of today, can be given in the home. Penicillin in a nonirritating medium and propane added to it, 300,000 units per cc., I have given to youngsters without any redness or soreness developing and without any suggestion of any sort of abscess forming and with no discomfort at all. I think duracilin, and some of the others that I do not know the names of, are much better to use in the home. I do think certainly that giving it by the intramuscular or parenteral route is better than the oral route, and now that we have this less irritating form of penicillin mixture, it is a much better way to give it in the home.

DR. PETERSEN: I thoroughly agree with that. The mouth penicillin is comparatively ineffective, even in large dosages, though not completely so. Also the ordinary crystalline penicillin, penicillin in an aqueous solution, need not be given every three hours as has been done routinely in the hospital. It was shown at the Dallas meeting of the Academy of Pediatrics that penicillin could be given at six, eight or ten hour intervals in aqueous solution in large doses. It eliminates sticking these children too often.

DR. HERBERT: I think the thing one should keep in mind is that some day sulfa and penicillin are going to be needed. Do not give it to every Tom, Dick and Harry because some day they will need it for some bacterial or blood stream infection and you are going to be up the creek without the paddle. So save it until you need it, because it is easily available now, and do not start using it for everything under the sun. They will get penicillin resistant and they will get sulfa resistant, too.

DR. HAMILTON: Still on this penicillin—I do not mean to say penicillin orally does not do any good at all. I have used penicillin orally. I do not use it often, and I have seen youngsters treated in the home that I wanted to give penicillin by the injection route but it received such resistance from parents and screaming youngsters that it is almost impossible to do. I think, though, in the upper respiratory infections in which there is otitis media that sulfa or penicillin oftentimes is the only answer to get away from the draining ear, particularly if the drum is bulging and there is evidence of pus beyond the drum. In some of the cases in the home I have given large doses of penicillin orally and in some cases I have had good results. I do think that when dealing with otitis media, following an upper respiratory infection, the youngster is taken out of the ordinary class of a cold and is certainly more seriously ill and needs to be treated more energetically.

DR. HOGG: Dr. Eto, I wonder if you would comment briefly on this question. It is a tremendous field and you will not have much time for it; the diagnosis of mild rheumatic fever of children.

DR. ETO: I think that in most cases of so-called mild rheumatic fevers they are actually not rheumatic fever and some of the symptoms which are pointed out as being diagnostic of rheumatic fever

are conditions that are not serious; for example, nosebleeds. I think most cases of nosebleed in children are the result simply of dried mucus which has been sneezed or picked out from the nasal septum near the vestibule. Joint pains or growing pains in many cases are the result of ill fitting shoes, of eversion of the feet, in other words, postural. Many of the cases that have come into the hospital through the St. Louis University group have come in for diagnosis of rheumatic fever. They have had several tests done and in most cases were negative. Many cases of heart murmurs, I am sure, are functional or on the basis of congenital anomalies. Even in the cases thought truly clinical pictures of rheumatic fever, the electrocardiogram has not helped too much. In rare instances the PR interval would be prolonged. Therefore, I would choose to answer the question from the standpoint of ruling out the more simple things which produce the symptoms which are suggestive of rheumatic fever.

Dr. Hogg: Dr. Petersen, I wonder if you would discuss the treatment of monilial infections of the mouth and throat.

Dr. Petersen: There is one infection perhaps, in older children for the use of penicillin by mouth, but I think the less traumatizing one does to the baby's mouth in this type of infection, the better off one is. Too many mothers reach in with their fingers and wipe out the baby's mouth to try to clean what is just milk and thus traumatize the mouth to the extent of secondary infection. Aqueous merthiolate or a weak solution of gentian violet on a swab is as good as anything. I use those routinely.

Dr. Hogg: Dr. Hamilton, the next question is, discuss the best treatment for pin worms in infants.

Dr. Hamilton: I do not think there is any really good treatment for pin worms in infants. I have not been too successful in treating them. I think one will find that not checking the whole family is a mistake. We know that pin worms is a self-limited disease and eventually the child would expel all his pin worms and would be free from infection. However, these pin worms crawl out of the anus at night and lay eggs on the skin and crawl back in, and the youngsters scratch themselves and get eggs under the fingernails and on the bed clothing and they put their hands in their mouths and reinfect themselves and infect the whole family. To treat pin worm successfully, the whole family must be examined and the whole family treated. I do think in the infants I have had some good results by the use of garlic bulbs. It is a grandma remedy, and I have had some pretty good success with it. This is what I have done: I have the mother get a crock of hot water and throw in a handful of garlic bulbs and let it steep over night. One had better put it in the basement because it smells pretty terrific. The next morning the infant should be cleaned out well with an enema and then one or two ounces of this garlic solution instilled as a retention enema and repeat it for several days. I think, too, that perhaps putting mittens on the baby's hands to keep the youngsters from scratching themselves, using some sort of an ointment around the rectum like 4 or 5 per cent ammoniated mercury, will take care of the eggs on the skin, and this often times will handle the situation. I do instruct the mothers to have all the floors possible scrubbed with some disinfectant solution and the bed sheets boiled, and to watch the rest of the family. Caprocal or gentian violet can be used along with the general sanitary measures.

Dr. Hogg: Coming back to the question that has been discussed pretty thoroughly is one on otitis media. I would like Dr. Herbert to answer this question. What is the present status of chemotherapy versus surgical intervention in otitis media?

Dr. Herbert: The incidence of mastoid has dropped tremendously since we started using the sulfonamides or penicillin, whichever one one prefers. We have given sulfa drugs in plenty of cases. So as far as preventing otitis media *per se,* I do not think it matters a great deal because I think it is going to develop. I think with edema in the region of the internal opening, if the organism is sealed in and spread out, it infects it. Once one has an otitis media and opens it, I give sulfadiazine in big doses until the ear stops draining, and when it goes without sulfa for a few days and stops, it starts draining again. In otitis media *per se,* as far as prevention is concerned, one does not get to them in time to prevent it. It certainly prevents mastoidectomy in the vast majority of cases.

Dr. Hamilton: In the treatment of otitis media the use of nose drops is helpful. The internal ear drains close to the posterior nares and using some sort of a mucosal shrinking drop with the head of the child lower than the rest of the body opening up that canal so any collection of pus or serum or fluid can drain down into the nasal pharynx and into the throat, is useful.

Dr. Hogg: Dr. Eto, would you discuss briefly the merits of the sulfonamides in the treatment of bacillary dysentery?

Dr. Eto: I imagine the question would be whether to use the various sulfas, that is sulfasuxidine, as compared to the sulfas that get into the blood stream. In St. Louis we have not seen many cases of bacillary dysentery which have been proven by stool cultures. But of the few that we have seen, we have tried sulfasuxidine, which I believe is preferable to guanidine because of the much less toxicity which has been attributed to the sulfasuxidine. The argument for sulfadiazine, especially in the treatment of bacillary dysentery, has been stated to be attacking the infection from the submucosa side instead of having the sulfathiazole strictly within the lumen of the intestine. Many of the so-called diarrheas are not dysenteries, but perhaps simply food poisoning or what one likes to call intestinal flu because of want of a bet-

ter term. Most of these cases respond quite well to a diet which limits the fat intake and removing oily products from the diet and the use of small doses of paregoric incorporated in adsorbants such as pectocel preparations.

DR. HOGG: We have several questions on nonspecific diarrheas, which is certainly a tremendous field. I would like Dr. Petersen to make a few remarks about nonbacterial diarrheas in infants.

DR. PETERSEN: I take it from the question you are speaking of the more mild ones. The mild noninfectious diarrhea responds to the old standby treatment of a starvation period. I often explain that by saying I would like to keep the intestinal tract empty. One has to emphasize, too, to the same mother that the fluid intake has to be extremely adequate. If that cannot be kept adequate and the patient is having ten, twenty or thirty stools a day, I think he should be in the hospital because that is a dangerous condition in the small baby. In the newer concept on treatment of those in the hospital, I understand, potassium salts intravenously in any solution that is now on the market and, of course, amigen and the use of some of the antibiotics or sulfas and streptomycin are of great value in some of these more chronic or severe forms of the acute diarrhea. In the starvation period, adequate fluids must be emphasized particularly.

DR. HAMILTON: In the use of Darrow's solution, have you had any serious cardiac complications?

DR. PETERSEN: No. I have not used it enough to see it.

DR. HERBERT: Be sure you hydrate them with Hartmann's solution because, then, there will not be heart block.

DR. HOGG: Dr. Hamilton, here is something that is probably applicable to the ear, nose and throat man. How about penicillin spray?

DR. HAMILTON: I cannot say much about it because I have not had too much experience with it. I know that the ear, nose and throat people use it, but I would like to ask if any of the members of the panel up here perhaps have had more experience than I have that would rather comment on it. I have had practically none and I do not know much about its relative value.

DR. HOGG: Are there any comments?

DR. PETERSEN: Penicillin spray in nose and throat infections is valuable in some of the chronic infections of children associated with bronchial diseases, an invaluable adjunct. Penicillin given intramuscularly or subcutaneously for bronchitis and sinus infections I think is rather ineffective as compared to aerosol penicillin. I think it is one of the newer things to use in the last few years that we cannot dispense with. Along that line, on otitis media, the question was asked about surgery. There cannot be any substitute for surgery on a bulging ear drum. There is no point at all, in my mind, for the use of penicillin to dry up the pus back there, and there is no substitute for the knife on the ear drum.

DR. HOGG: Is there any specific for virus infection of the respiratory tract?

DR. ETO: Perhaps one can create a little hope for the distant future. I think there was one work that came out of the University of California in which for the first time it was shown microscopically that a certain dye was able to arrest the growth of the tobacco mosaic; but at the present time I think it is just reliance on symptomatic treatment and good old aspirin.

DR. HERBERT: Since he has gotten into that, I read that article, also. The only way one can ever get a drug to the virus which is intracellular is to get a drug that will cross the cell membrane. We do not have it. And in this article they say that until we get one those large viruses that one can hem up and keep outside, or maybe in passing from one cell to another one can get intercellular action from the drug, one will get somewhere. But to me it is rather hopeless. Right now that is the general opinion. In addition to that, talking about diarrheas, I have several cases in the hospital at this time of severe diarrheas, with temperatures of 103 F. to 105 F., and the children are toxic and they have leukopenia, which to me means a virus enteritis. You call it intestinal flu.

DR. HAMILTON: We do have some treatment against the virus of measles, and globulin is playing an important role right now. I am sure you are all familiar with it. In youngsters that are chronically ill, with tuberculosis and so forth, and have been exposed to measles, we actually can prevent the measle attack from occurring by using large doses of serum gamma globulin. We have a severe epidemic in St. Louis. When the youngster is exposed and the mother notifies the doctor within the first six or seven days, the appropriate amount of serum gamma globulin is given. This serum is an antibody. It is the first time it has been determined just what an antibody is. By giving the serum gamma globulin we have been able to attenuate these measles cases, and those who receive the serum gamma globulin go through a much milder course. Sometimes the rash lasts a day or so, and sometimes there is a little elevation of temperature and a little cough and coryza. It is an important therapeutic and prophylactic procedure in the treatment of measles, and that is a definite specific attack on the virus infection.

DR. HOGG: We probably will have a discussion on immunization in the next panel and I know that subject will be thoroughly covered. We have one question that is worded, I believe, as well as it can be worded. There have been numerous members that have wanted colic discussed. This question says: How about colic? Dr. Petersen, will you answer that, please?

DR. PETERSEN: I expect we might as well start at the beginning on this. The treatment of colic is something that is a little like the treatment of virus pneumonia, I suppose, because one has nothing for it.

Let's put it differently. Coming down in the elevator one of the other doctors said, "It's the art of keeping them happy until they are 3 months old." I too think there is a great deal of merit in keeping parents happy until the baby is 3 months old. But there are some things one can do. One first takes the fat out of the food and changes over to some of the more assimilable forms of carbohydrate in the formula. I am speaking of bottle babies right now. Atropine is of value, and phenobarbital is indispensable, and elixir nembutal may be tried.

Then the next step, I think, is to assume that the baby may be allergic to milk and try to put him on something else. He has been on four or five formulas by now and is still crying, so one tries goat's milk. That will take care of a few more, but sometimes the goat's milk will not work and one tries a soy bean product, and if one can keep the baby from crying for more than three or four hours a day, I think you are doing a pretty good job.

I find that the use of thickened feedings helps a great deal, and the use of pablum or rice flour or potato flour to thicken the feeding is of tremendous value.

Many of these babies are born with an immature and undeveloped intestinal tract and probably they are going to keep on crying in spite of goat's milk and soy beans and atropine, phenobarbital and nembutal and thickened feedings and skimmed milk, lactic acid and protein milk and all the others. One needs to try them all and use them all. If there is any one answer, I have not found it. It is not a completely hopeless problem, but I believe with some of them, as Dr. Eto says, it is the art of keeping the mother happy until the baby is 3 or 4 months old.

Dr. Hamilton: I want to bring up a point that I think is part of the picture in many colics, that is a tension factor. I have never seen colic in a clinic baby. I believe in a loose-feeding schedule. I do not believe in the strict schedules, but I have not swung over to no schedule at all. I have been looking for colic in the clinic babies, and I have yet to see one case. I find the youngsters are not on a strict schedule and they are often fed when hungry. Often times one sees mothers who have eight or nine children and do not have time to worry about the younster if he has colic or not. The youngsters actually do not have it. Perhaps a loose schedule of feeding and less concern from parents will minimize much of the crying.

Dr. Petersen: Another thing on that same topic. I subscribe to the irregular feeding proposition with babies, particularly those on the breast. I often find that in some of these colicky babies, if they are allowed to have their food every couple of hours, small amounts of one or two ounces or as much as they wish, many of them will keep still with that. As to the tension factor, between 6:00 and 10:00 o'clock the mother is tired and the baby is tired and has been handled by a good many people and usually is ready to give up; he has his insides so stirred up he has not had a chance. That is one of the big reasons for the 6:00 to 10:00 crying. One should not make these babies wait three or four hours just because of an idea we have had or the way we have been taught in the past. If we had to wait for four hours to eat, we expect to get a candy bar or a glass of milk or something else to eat, and I think the baby deserves the same break.

Dr. Hogg: Dr. Herbert, I wonder if you would answer this question. Is the use of glycerin suppositories preferable to laxatives in cases of constipation in infants when dietary methods fail?

Dr. Herbert: I do not like glycerin suppositories. I would rather use either water or a soda bicarbonate enema. Glycerine to me is a dehydrating agent and if you will run your finger up the rectum, you will get more spasm afterward than you had before. I do not like laxatives. In constipation one can still start juggling the diet, adding in more carbohydrates, and one can use prune juice if the baby is as much as 2 months old. And I do not hesitate to start in with stewed fruits, cooked in the pressure cooker, starting with dried peaches and adding a lot of sugar, and cook it and pulverize it and feed it. When you add bulk and water, you can get by with about 90 per cent of these and it is seldom that I have to use a laxative. When I do, petrosyllium is the one I prefer; but I like enemas, roughage and fluids by mouth and, as a final resort, petrosyllium, but I do not like glycerin suppositories and I do not like laxatives.

Dr Hogg: Dr. Eto, do you have any comment on this question?

Dr. Eto: In some cases of constipation it would be wise to look at the anus for the presence of rectal fissures. Sometimes one would be surprised in finding four or five deep large fissures, which must be treated. Not infrequently the mother and the baby leave the office quite unhappy when you apply 10 per cent silver nitrate solution to the fissures and you wonder whether they will come back. Sometimes it is necessary, but at other times one can add an extra amount of cooked fruits to the diet in an attempt to keep the bowel movements soft. Why some babies have hard dry stools I do not believe has ever been determined. Is it because they pass more water through the urinary tract, or is it because they retain more fluids? I do not know. Sometimes one does have to resort to mineral oil substances to keep the bowel movement soft. Sometimes one can try using yeast products or B-complex products, which might change the bacterial flora of the intestines, thus loosening up the hard dry stools.

Dr. Petersen: Sometimes a little molasses or dilating the rectum will help in a lot of these cases.

Dr. Herbert: He brought up a good idea. Frequently, if they want to give a glycerin suppository I have them take the small tip on the douche bag and grease it with vaseline and push it in the rectum.

Dr. Hogg: Dr. Eto, here is a question that I would

like for you to answer briefly. What would be your advice to a young couple whose last child had erythroblastosis fetalis, in regard to future pregnancies?

DR. ETO: My personal advice would be to go ahead with their pregnancy in spite of the fact that there are statistics in the medical journals about the incidence of erythroblastotic babies where the Rh factors are supposedly fitting, because we have seen too many cases of mothers going into the hospital and being prematurely induced, and of mothers being subjected to cesarean section and yet, in spite of the past history of the previous stillborns and so forth, coming through with normal infants. More and more statistical data are appearing which demonstrate the lack of correlation between the Rh setup in the mother and the baby, and the incidence of erythroblastosis. In the matter of inductions and sections and so forth, one of the biggest arguments against these procedures is the added problem of handling premature infants. We have not enough data to contraindicate further pregnancies on the basis of history. Not too infrequently these so-called erythroblastotic stillborns are simply not so, but simply miscarriages from some other reasons.

DR. PETERSEN: An exceptionally good paper was presented yesterday by Dr. Weis on this entire subject, and I think it cannot be improved upon by any answer here. He found only three deaths from erythroblastosis in some six thousand deliveries. That to me indicates one thing, that it probably is not such a tremendous problem as has been brought out. We also find by his statistics and those of many others that many parents have had children that were erythroblastotic babies and have several subsequent normal children.

DR. HERBERT: I would like to tell of an experience of three days ago. There were twins, six pounds, that were in need of blood, and we ran an Rh on them and they were both negative. We ran an Rh on both parents, and both parents were positive. I did not know what to do, and I finally found an Rh negative and gave them negative blood. I am ducking Dr. Eto from my left, knowing his views, with both parents being positive. It did happen. I cannot answer it, but it deals with the subgroups of Rh prime and double prime. I am like the rest of these men; do not be too alarmed, an automobile will get them before erythroblastosis.

DR. HOGG: Dr. Hamilton, I wonder if you would give your opinion of the so-called status lymphaticus in regard to sudden death of infants.

DR. HAMILTON: I have been on one side of the fence and on the other side of the fence. I have seen youngsters come in the hospital, when I was a resident, with minor upper respiratory infections and I have seen them suddenly expire and we have even diagnosed it as a thymus death. I have seen newborn infants with difficult respirations and we have taken AP chest plates and lateral views, trying to prove the thymus was enlarged and have given small doses of roentgen ray over the thymic area and I have seen the dyspnea improved, but that still is a question that has not been answered. I do not have the answer. I have never seen one thymus that could be shown anatomically to cause any sort of respiratory obstruction.

DR. ETO: I agree with Dr. Hamilton, that the so-called cases of thymic enlargement, where some cases actually seem to improve with roentgen ray therapy, should be investigated further from the standpoint of possible congenital anomalies, perhaps a redundancy of the mucosa or a growth. Certainly there has not been much work done from that standpoint. Most of the standard textbooks on pediatrics argue from the standpoint that essentially there is no such thing as thymic enlargement causing sudden suffocative deaths and so forth.

DR. PETERSEN: There are many of these youngsters who have respiratory symptoms that are attributable to a large thymus and in whom the roentgen ray shows some enlargement and on one or two treatments the symptoms disappear. I do not think the question is completely settled, but one will rarely find any pathologist who will say that death was caused by an enlarged thymus. I think it is merely a masking or inability to diagnose the cause of death and leads one to put that label on it, status thymus lympaticus. There is not such a true entity.

BRITISH DOCTORS FLOODED WITH PATIENTS

British doctors are so flooded with patients under the National Health Service that they do not have time to examine serious cases, reports the regular London correspondent of *The Journal of the American Medical Association.*

"With the onset of colder weather, doctors now complain that they are so flooded with patients under the National Health Service that they do not have time for the examination of serious cases. Hypochondriacs and persons who have only such ailments as slight colds, for which they would not trouble a doctor if they had to pay, come in numbers. At the first annual meeting of the Executive Councils' Association of the National Health Service, the Minister of Health, Mr. Bevan, confirmed this waste and referred to other forms of waste.

SYMPOSIUM ON PEDIATRICS

WILLIAM J. SHAW, M.D., *Fayette,* Moderator
PANEL
GEORGE V. HERRMAN, M.D., *Kansas City*
JOSEPH C. JAUDON, M.D., *St. Louis*
D. B. LANDAU, M.D., *Hannibal*
EUGENE J. SCHWARTZ, M.D., *Springfield*

William J. Shaw, M.D.: The second half of this panel on pediatrics is on immunization, allergy, heart disease, both congenital or infectious, growth and development and child guidance. We have several questions on these subjects, but at any time during the meeting if you will write your question on a card and send it up, we will try to get to it and have it answered.

I will ask Dr. Herrman to answer the first question we have on immunization. At what age should a child be immunized against pertussis and what vaccine should be used, alum precipitate or other type?

George V. Herrman, M.D., Kansas City: It is fairly well proven and certainly the trend has been to immunize early because the infant has no immunity to whooping cough at birth. The trend now is to immunize them in the third or fourth month. Most pediatricians, and I am sure most physicians who immunize babies, are immunizing them earlier than we did a few years ago. In the choice of vaccine the alum precipitate is the method of choice, especially if the immunization is early. Of course, the routine immunization can be given several ways and, if we get onto that subject, we can probably answer one of the questions that is to come later. We should not forget booster doses of vaccine.

Dr. Shaw: Here is a question along the same line which I will ask Dr. Jaudon to answer. Last year in Missouri forty-nine of the sixty-seven reported deaths with pertussis were in infants under 1 year of age, and forty-one of those were infants under 6 months. In view of these reports, should immunization be encouraged at an earlier date?

Joseph C. Jaudon, M.D., St. Louis: It is quite obvious that if the death rate from pertussis in early infancy is to be lowered appreciably, then immunization must start early. There is a fair amount of evidence in the literature to indicate that one can transfer immunity passively to the fetus by immunizing the mother during the last trimester of pregnancy. This may be another way to attack the problem. In St. Louis a few doctors are immunizing the mothers during the last trimester of pregnancy. At the St. Louis Children's Hospital Clinic they have been starting pertussis immunizations with a water vaccine in the first 6 to 12 weeks of life. In private practice we are starting immunization between the third and fourth months. When immunization to whooping cough is started at this early age, we delay diphtheria-tetanus immunization until the sixth month or later. It has been shown that the antibody titer to diphtheria is not as well developed in the first six months as the last six months of life and, as you know, if the mother is immune to diphtheria, the baby will have a passive immunity the first few months.

Dr. Shaw: Dr. Jaudon, I would like to ask you one further question. Would you advise immunization of artificially fed infants at an earlier age than breast fed infants?

Dr. Jaudon: There is no conclusive evidence which proves that immune bodies are present in the breast milk to protect against specific diseases. Therefore, I would not classify breast fed babies in a different category from artificially fed babies as far as immunization procedures are concerned.

Dr. Shaw: Dr. Landau, we have a number of questions on the use of gamma globulin serum in measles. I want to know if this causes serum sickness, and the value and method of using this treatment of measles.

D. B. Landau, M.D., Hannibal: I have seen no serum sickness or any reactions whatsoever, with the single exception of one child who had rheumatic fever whom I wished to protect and gave a large dose with the idea of complete protection. She had a fair amount of local reaction which subsided within twenty-four hours. This serum can be used for the complete protection and especially should be used in children who have positive tuberculin tests or who have any signs of any tuberculous infection; it also should be used in the real young and the weak and the child who has been subject to repeated infections. I use it for complete protection for any child under the age of 2 and even older than that if they have had a fair amount of infection for the preceding few months. Obviously, if the child happens to be suffering from whooping cough, that child should be protected because the combination of measles and whooping cough is especially disastrous in the young. In older children, whether there is much indication for its use or not, if they have had a fairly hard winter, it often is given with the idea of modifying the measles. In that event it is not given in as large a dose. One must remember, however, that a modified measles does not always give a complete immunization against measles and, in certain instances, these children, even though they have had a modified measles, may really develop clinical measles later.

DR. SHAW: Dr. Schwartz, what is the status of antipertussis rabbit serum made by Wyeth in protecting children who have already been exposed to pertussis?

EUGENE J. SCHWARTZ, M.D., Springfield: Rabbit serum and also hyperimmune human serum can be used in two ways: it can be used in the protection of a child against whooping cough, or in the treatment of the disease. I have not had as much experience with the rabbit serum as I have the human serum, but I have found that if one gives one dose at the time or shortly after exposure and another dose approximately a week later, that one can protect the majority of children from whooping cough. I am speaking particularly of the young children, because those are the ones I think should be protected. Likewise, in the use of it in the treatment, regardless of how severe the case is, I have had uniformly good results in giving them two or three doses of hyperimmune serum in the treatment of the whooping cough. It definitely cuts down the severity and frequency of the paroxysms and shortens the duration of the disease.

DR. SHAW: Here is a question that was asked in the first half of this meeting, and I would like to repeat it and ask that it be answered from a little different angle. The question is: What is the effect of giving children large or small doses of penicillin for acute infections, and what effect will repeated giving of penicillin to these children now have on them later? Dr. Herbert and Dr. Hamilton in the last session stated that it probably would reduce the child's tendency to respond to penicillin. The children probably would build up a tolerance to the penicillin and it would not give the desired response later. I would like to ask Dr. Herrman if he will discuss it from the angle that these children are building immunity to disease when they acquire minor infections and if they grow up without this immunity and, if they have developed a tolerance to penicillin, what do we have to offer?

DR. HERRMAN: If one does render a person penicillin resistant, certainly one cannot use that drug later on in a severe infection. For this reason, I agree with the speakers of the previous sessions, that is, to save that penicillin or keep it in reserve so one does have something to use in case of a severe infection later on. I do not believe in using penicillin nose drops, unless the child is getting penicillin for some other treatment. I do not use penicillin troches; in other words, I would rather keep penicillin clear away from them and not take the chance of making them penicillin resistant. I do not think we know exactly how many of these patients will become penicillin resistant. I do not think we have used it quite long enough to be absolutely certain. There are certain people that use it right and left for all kinds of infections, and certainly we all use it at times, but just to use penicillin like one uses aspirin, I think is wrong. It should be kept in reserve. I would much rather use sulfa than penicillin. In other words, keep that ace up your sleeve.

DR. SHAW: Dr. Jaudon, should doctors urge pertussis immunization after the age of 3 years?

DR. JAUDON: The mortality in pertussis is high during that first 2 years, particularly during the first six months of life. The necessity for immunizing healthy youngsters after 3 years has been open to question. Since whooping cough is a protracted illness, one should do something to minimize it. One series of immunizations without future booster doses might in the future give a modified case of whooping cough. It may be wise to immunize in the older age group.

DR. SHAW: Dr. Landau, at what age do you stop booster doses of diphtheria vaccine and toxoid?

DR. LANDAU: I immunize in the first year, along with the tetanus, and at the age of 6 years, or just prior to going to school, I give a repeat course. I know that sometimes it is advised to do somewhat differently, but two years ago we had a few cases of diphtheria in our area. We did not have many, but enough so that everybody was frightened, and a number of them who had been immunized previously came in to check on their status. A number had received fluid toxoid previously and alum precipitate toxoid, and all of them received three doses. They had been immunized at least four years prior to this small epidemic. A great number of them were Schick positive, so I was convinced then that the best thing to do would be to give them a complete course of immunization at the age of 6 and from then on I think one may well assume they are immunized for life, but in the presence of an epidemic or an exposure subsequently, they certainly should be Schick tested again. But with two complete immunizations of that sort, the chances are certainly better than 95 per cent that they are completely protected.

DR. SHAW: Dr. Schwartz, what is the relative value of sulfonamide and aspirin for fever?

DR. SCHWARTZ: I do not know whether that was for a joke or not. The two drugs have a totally different effect. Aspirin has a definite antipyretic effect, and the sulfonamides have no antipyretic effect and do not show any influence on the fever until they have controlled the infection to reduce the absorption of toxin into the body and the production of fever.

DR. SHAW: What value has streptomycin in pertussis and sulfa in preventing secondary infections?

DR. JAUDON: It is believed generally by the pediatricians at St. Louis Children's Hospital that in these pertussis cases on whom streptomycin was used the course is shortened. Because the series of cases is small and hyperimmune human pertussis serum also is used frequently, no dogmatic statement concerning the value of streptomycin can be made.

DR. SHAW: Does the patient become penicillin resistant or do the infecting organisms become penicillin resistant?

Dr. Jaudon: There is definite bacteriologic evidence that would indicate that the longer one gives any drug the better chance there is for the mutation forms of the organism to grow and that these mutants can, sometimes, outgrow the organism for which the specific antibiotic or drug is used. We know of organisms that are streptomycin dependent; will not live outside of the environment of streptomycin. The more bacteriologists study this problem, the more they realize that any one specific sulfa drug or antibiotic does not solve the whole problem. The sulfonamide and antibiotic agents that are being given are bacteriostatic and not bacteriocidal, and it is up to the tissues of the body to eliminate that specific disease. These statements can be used again as an argument for the indiscriminate use of the antibiotics and the sulfa drugs for every upper respiratory infection. There is a tendency now to use these agents only in actual or anticipated complications of upper respiratory infections. For instance, in an acute tonsillitis, an inflamed but clean pair of tonsils in a child not overwhelmingly septic, without enlargement of the cervical glands or otitis media, we give him aspirin and force liquids. Those of us that have practiced before the advent of chemotherapy and antibiotic therapy know that the majority of these youngsters will recover promptly on their own. However, if the child has otitis media, that is an entirely different proposition. Otitis media may be a forerunner of a mastoid infection and we believe adequate amounts of sulfa drugs or antibiotics or both should be used as soon as noted. The body itself can become sensitized to penicillin, streptomycin or any of the sulfonamide drugs. Penicillin given over a long period of time may cause a similar type of illness as serum sickness.

Dr. Shaw: Dr. Landau, will you discuss the role of antihistamine drugs in infantile eczema and the percentage of good results?

Dr. Landau: In the use of the antihistamine drugs, I presume you mean benadryl and pyribenzamine, the results have been disappointing in the treatment of infantile eczema. It was used extensively but from personal experience I would say I have had no success, and from what I have read in the literature on the use of these for infantile eczema the results have been disappointing and do not compare with the results obtained in some of the urticaries and hay fever.

Dr. Shaw: Dr. Schwartz, what endocrine systems can affect asthmatics and what are used as adjuncts in treatment?

Dr. Schwartz: The one we think of offhand is the adrenal gland and all know the effect that adrenalin or epinephrin has on an attack of asthma. I think that the experience of the Army would indicate that the nervous stability of the individual has a great deal to do with the outbursts of allergic manifestations, but I do not know of any glandular system that is connected with allergy other than the adrenals.

Dr. Shaw: Dr. Herrman, will you discuss briefly the type of food you would use in an infant who had eczema which you found ought to be due to milk, all forms of milk or milk substitutes?

Dr. Herrman: In eczema, if the eczema is due to allergy of milk, number one on my list is nutramigen. The infant does not care for it at first but if they get hungry they will take it. It should be diluted about one tablespoon to three ounces of water at first and gradually stepped up to one tablespoon to two ounces. There are other preparations, such as sobee, and other soy bean preparations that are used, and certainly that is the answer. For my own private practice, I do prefer nutramigen.

Dr. Shaw: Will you discuss for the general practitioner congenital heart disease from his viewpoint and just how far the general practitioners should be able to differentiate between the congenital heart lesions and how soon he should refer these patients for surgery, if he thinks they need it?

Dr. Jaudon: That is a good question. As all know, cardiac surgery is relatively new and in another few years I think we will be able to answer this question a little more dogmatically. Cardiac surgery offers hope of salvaging some of the infants with severe anomalies of the heart and prevent chronic invalidism during their sojourn on this earth. The best time to operate is anywhere from 3 to 5 years. However, when one has evidence of pulmonary stenosis and dextroposition of the aorta, clubbing of the fingers and loud rasping systolic murmurs, right heart enlargement and history of cyanosis from birth, the baby may need operation within the first year of life to be able to save that life. One of the determining factors, according to Helen Taussig as to when these patients should be operated on under 3 years of age is, if the cyanosis becomes sufficiently severe to cause periods of unconsciousness. That is a definite indication for surgery at any age. In tetralogy of Fallot they might have to be operated on yearly, but the ideal time is between 3 and 5 years. In coarctation of the aorta the ideal time is around 3 to 5 years. There are hearts that cannot be operated on, like the Eisenmenger complex. However, we are not too well acquainted with that type.

The other type, the most common type, is the patent ductus arteriosis and in that type of case there is a to and fro murmur over the base and there may or may not be periods of cyanosis and usually no evidence of clubbing of the fingers, and that individual should be selected for operation preferably after the fifth year. Dr. Meryl Carson, at Children's Hospital, does angiograms to determine the exact cardiac anomaly.

Dr. Shaw: I believe that is the answer to one. In other words, if we find out that it is a congenital heart lesion, we send it to somebody to make the final diagnosis. Right?

Dr. Jaudon: That is right.

Dr. Shaw: Dr. Landau, what index may be used

in children with acute rheumatic fever and with cardiac involvement in restoring the patient to normal physical activity?

DR. LANDAU: The only treatment that we have for active rheumatic fever is rest. We use salicylates for the symptomatic relief in the course, but rest still remains the only thing that we really have in the active treatment. For the determination as to when one should stop absolute bed rest, one must rely on clinical evaluation plus certain laboratory findings. We have the mother keep an accurate chart at home on temperature and pulse. The temperature at all times of the day must be certainly below the upper limit of normal, which is just under 99 F. rectally. The pulse should be within normal limits, depending on the age of the child, and it is important that the child should look good and feel good and act as though he feels well. There must be an absence of symptoms, such as the child must be free from joint pains or pains of any sort, the appetite must be good, there must be no evidence of chorea, the heart sounds should be of excellent quality, pulse rate slow and any murmurs that might have been found should be at a stationary phase and no advancement or no change in their sounds. When the child has reached that stage at home and has been temperature free for at least two months, I take them to the hospital for further study such as electrocardiogram and sedimentation rate besides the routine procedure of blood and urine. Serum coagulation test sometimes is of help. If everything is all right, they may be taken home and allowed to sit up for varying periods, gradually increasing the period during the day and, if they react to that well, the activity may be increased. There is no sharp end point as to when activity can be resumed. I explain to the parents that any errors I am going to make regarding letting a child up are going to be on the side of keeping them in bed too long rather than letting them up too soon.

DR. SHAW: Dr. Schwartz, has the prolonged use of sulfonamide as a prophylaxis against recurrence of rheumatic fever been of value, and if so what is the indication for stopping it?

DR. SCHWARTZ: Fortunately, in this part of the country we see little rheumatic fever. I think that the rheumatic fever zones are chiefly on the East Coast, down to Virginia and then during wartime we found an area of rheumatic fever extending through Utah, Colorado and down into Texas. For that reason I personally have had little experience with the prophylactic use of the sulfonamides in rheumatic fever; but the people in the East who are seeing large groups of rheumatic fever cases, particularly clinic cases, are reporting a greatly reduced incidence of recurrences in the children who are regularly taking one of the sulfonamides daily.

I think that in giving the sulfonamides in small amounts as one does prophylactically, there is not the danger of leukopenia or granulocytosis as in therapeutic doses. The blood should be observed regularly and if leukopenia of four thousand or less develops, I think the drug should be discontinued. If the child shows any other evidence of drug sensitivity, I think that the drug should be discontinued. I think that the drug should be continued, unless there are contraindications, for a period of three years from the last definite rheumatic symptoms.

DR. SHAW: Dr. Herrman, in what types of heart disease is digitalis indicated in pediatrics, and what preparation is best to use, and what dose schedule is used?

DR. HERRMAN: Digitalis should be used in treating paroxymal tachycardia. Tincture of digitalis is about as good as any of the preparations. I used that in the three cases I have seen. I will admit that I picked up the journal and checked up hurriedly on an article I had reviewed sometime before to get the dosage when I saw the first case. As I remember, we gave 3 minims about every twelve hours for two or three doses and cut the dosage down to 3 minims a day. Of course, digitalis is used in cases of heart failure and it does certainly give the muscle of the heart a better tone. That is about the only times that I do use digitalis in pediatrics. Digitalize rapidly and remove salt entirely.

DR. SHAW: There have been a number of questions in regard to child guidance and growth and development, and three out of eight of them deal with enuresis. I will ask Dr. Jaudon to give the treatment of bed wetting in older children, with no pathologic conditions found.

DR. JAUDON: Enuresis, of course, is physiologic up to a certain age. And when is that certain age? Of course, that, like everything else, varies. One youngster in the family may stop at 1½ years and the other may stop at 9 years. A child can have enuresis and have a perfectly stabilized family environment, with no psychogenic upsets; and, on the other hand, one can have children with enuresis that have obvious tense environments and if that tension is removed, the enuresis stops. In general, the majority of the cases of enuresis, if left alone will disappear spontaneously providing the child is in an understanding and stable home environment.

The older child, that is a deep sleeper, occasionally can be helped by a small dose of ephedrine sulfate before retiring. Theoretically, that puts him more or less on edge and the bladder reflex may be elicited by that individual and he gets up to urinate. However, in the wiry, nervous, jittery patients that sleep lightly at night, of course, the ephedrine sulfate does not do a bit of good. In general one can say that the least done for enuresis in a high-strung, nervous type of individual as far as medication is concerned the better off the patient will be. It is up to us as physicians to try to give that child a calm home environment.

In a fair percentage of cases a hereditary tendency to enuresis exists. We frequently get a history of the father, sister, uncle and so forth having had enuresis for many years. In that type I do not be-

lieve that the psychogenic factor is a primary cause. We have used water restriction and increased salt intake before retiring without beneficial results. The only treatment I have found that does any good, outside of using the psychogenic therapy in the family that needs it, is the use of ephedrine sulfate before retiring in the sound sleeper. Of course an anatomic basis for the enuresis should be ruled out.

Dr. Shaw: Here is a question that goes back to rheumatic fever. Dr. Landau, what effects do sulfonamides have on patients with active rheumatic fever?

Dr. Landau: Sulfonamide is contraindicated in active rheumatic fever. It was used early in the clinical trials, when sulfa drugs first came out, and these children were made worse. So active rheumatic fever is a definite contraindication to the use of sulfa drugs and in planning to use sulfa drugs in the prophylaxis in the prevention of subsequent attacks of rheumatic fever, it is important to determine the freedom from activity before starting it.

Dr. Shaw: We are back on child guidance again. Dr. Schwartz, here is a double question: What are the factors to be considered in cases of repeated masturbation in the 2½ to 4 year old boy, and what should the worried mother be told?

Dr. Schwartz: I think that masturbation in children under 6 years has about the same implication as thumb sucking or any other habit from which they derive pleasure. There is no concept of sex in most children of that age, and I think it should be explained to the mother that it has no sexual implications and would belong in the same category as thumb sucking or other habits and should be treated as such. I think that the sure way to establish the habit and keep it going is to do something about it.

Dr. Shaw: Dr. Herrman, what is the proper approach for the general practitioner in treating behavior problems in children?

Dr. Herrman: That takes in a lot of territory. First, I think I would advise everybody to get the book on baby and child care by Spack; it is fine, not only for the parents, but for the practitioner and pediatrician, which really is a practitioner limiting himself to children. I think too much of an issue is made over many of these psychologic problems. I think oftentimes, as Dr. Schwartz mentioned, the problem is made worse by an overanxious parent or as the case may be both of them overanxious, whipping and scolding, rewarding and so forth. Oftentimes it is the best to just mark time for a while and start all over with a clean slate. Of course, that is just a general thing and certainly I think various behavior problems would have to be treated in various ways. In some children, when they are high tempered and high strung, oftentimes a chip off the old block, the problem is certainly one for which one cannot chastise the child and expect to have him overcome his hot headedness. It is a matter of cautiously feeling one's way along, possibly citing other children that do not explode when little things upset them.

Dr. Shaw: I would like to go back for a few minutes and ask some short questions on immunization. Dr. Jaudon, at 6 years, an immunized Shick positive child is exposed to a case of diphtheria in the home. Should one give a small dose of antitoxin?

Dr. Jaudon: All susceptible contacts of a diphtheria patient should be given immediate protection, a small dose of antitoxin, about 1,500 to 5,000 units.

Dr. Shaw: Dr. Landau, is a single dose of fluid D.P.T. sufficient booster to a child who has had an adequate basic immunization?

Dr. Landau: I think it is.

Dr. Shaw: Dr. Schwartz, do you consider routine tetanus toxoid inoculation advisable?

Dr. Schwartz: No question about that. The experience of the armed services was that among fifteen million men immunized in service, there were only ten cases of tetanus and there were only six of those who had completed their entire immunization course. Now, when one considers the fact that tetanus was the second greatest cause of death in the previous world war, I think cutting the death rate from tetanus down to six out of fifteen million is something really worth while. I think that the use of antitoxin, because it is a foreign protein and a highly allergenic one, is more or less limited to one dose. Then one can realize the necessity for protecting these children because one has no certainty that they are only going to have one injury in their lifetime. I am in favor of prophylactic immunization against tetanus.

Dr. Shaw: Dr. Herrman, how does intranasal installation of antigen compare with intradermal injections in the treatment of whooping cough?

Dr. Herrman: It does not compare at all. Frankly, I do not have much use for the intranasal. I may be wrong.

Dr. Shaw: Dr. Jaudon, what program does the Missouri State Medical Association have, if any, to cooperate with child welfare in the care of premature infants? Stress the important points in care and treatment.

Dr. Jaudon: This program is in its infancy. The impetus to develop a program for the care of premature babies through a state organization was started by the Academy of Pediatrics and at the present time there has been a great deal of circularizing of information to all the state chairmen. I happen to be on the committee for the fetus and newborn and have hopes that the care in accredited hospitals will be standardized similar to the American Board of Surgery has its minimal requirements. The premature baby has a definite physiologic handicap that is not present in a full term baby and should receive a special type of care and, not only environmental care, but special type of food with a relatively low fat content and high protein and carbohydrate content. There is a great tend-

ency now for all big hospitals to have certain sections within the hospital where these premature babies can be isolated. This is a new program and has just gotten a good foothold but within the next few years we will be hearing more about it.

DR. SHAW: Dr. Landau, will you discuss the therapy of undulant fever in young children, and my addition would be, and adults?

DR. LANDAU: As far as I know, there is nothing that is adequate in the acute phase. Sulfa drugs can be used. In the chronic phase penicillin has been used. I doubt whether brucellin does much good, but that is only my own opinion. In the acute phase the sulfa drugs have been used and the reports have been fairly good. Recently, since the advent of streptomycin, it also has been used and there have been some favorable reports on that, but I cannot adequately answer the question.

DR. SHAW: We will go back to child guidance. I have one question that really is in two parts. The first part will be to Dr. Schwartz and the second part to Dr. Herrman. Dr. Schwartz, will you discuss the psychologic aspects of toilet training? And Dr. Herrman, will you discuss the psychologic therapy in the feeding problems?

DR. SCHWARTZ: I think that we are born with the natural tendency to complete our tasks of emptying our bladder and rectum wherever and whenever we have the urging to do so. I do not think that one's reflexes become automatically adjusted at a certain age so that at 6 months all children should be trained to use the stool, or at a year all of them will tell you when they need to empty their bladder. I think the logical approach to any of the subjects in children, or in the training of children, is common sense. I think that if one can accomplish training as far as the stools are concerned by the time the child is a year old and the bladder training about the time the child is 1½ or 2 years old, one has accomplished all that one need to accomplish. One may have washed a few more diapers in the meantime, but one has cleaned a few less training pants.

DR. HERRMAN: As to the psychologic affair of feeding problems, the important thing is to prevent those problems in the first place. A lot of those problems can be prevented by starting various foods at the proper age. Of course, do not give up if they do not decide to eat well from a spoon and do not poke it down; they will gradually get the idea and start eating. The same thing is true with us. If someone would hand us a couple of chopsticks and say, "Start eating," we would not like it and we might lose a few pounds until we learned to master the situation. A lot of those psychologic problems are really made by the mothers that do not take the baby off the bottle young enough. They wait until the baby is 15 months old or so and decide they are going to give it a cup. By about that age they are fairly stubborn and will not change over to the cup. There are certain problems in eating. They do not eat the green beans, and so forth, but what difference does it make? It is definitely proven that if one puts a child in a hospital or in an institution of some sort and turns him loose and lets him eat cafeteria style, with the exception of desserts, he will average up the year in taking about the food needed. They will get their requirements. Of course, there are some things we must keep up such as the vitamins C and B in foods. But as far as making a child eat certain foods, we do not do it. Why should we stuff it down a baby's throat? Those problems are created by the mothers and fathers usually. If they are instructed to leave them alone and let them eat what they want, they will get tired of potatoes after a while and decide to take green beans or something like that. So I do not really see any reason to get alarmed about it; just leave the child alone and if they are hungry they will take it and be looking for it. There will be exceptional cases but these are rare.

DR. SHAW: Dr. Landau, do you recommend tonsillectomy in post-rheumatic fever patients?

DR. LANDAU: The criteria for tonsillectomy in post-rheumatic patients should be the same as that in the nonrheumatic patient. However, I think one must be a bit liberal in interpretation and recognize that there may be hidden foci of infection which are not apparent on examination of the tonsil. In general, I think that the tonsils should be removed, making certain, however, that the rheumatic process has been quiescent for at least six months.

DR. SHAW: In the last question in the first half of the panel this afternoon Dr. Hamilton referred two or three times to old grandmothers' remedies of which he spoke highly. I would like to ask Dr. Jaudon, what is the status of the grandmother in the care of the infant?

DR. JAUDON: I could discuss that in one sentence, and that is this: I think we have gotten to the point now where we have become so up to date that we are getting old fashioned in many, many ways. We are starting to feed our babies when they want to be fed, and to individualize their care from the first day. One is not going to spoil a baby by doing that, and one is not going to spoil a baby by giving him a little love in a rocking chair once in a while. The idea we had a few years ago of bringing babies up on clock schedules and letting them scream and not giving them a little sugar tit to suck on once in a while is beginning to backfire. We are now getting a lot better babies from the psychiatric standpoint and, also, the mothers are more relaxed. I think we have gone sufficiently far now to say that we are going back to some of good old grandmothers' ideas.

TOPICAL HEMOSTASIS WITH METHYL CELLULOSE

MARK M. MARKS, M.D., *Kansas City*

Oxidized cellulose and modified gelatin in the forms of Gelfoam, Oxycel and Fibrinfoam are effective topical hemostatic agents developed in the last six years. Their immediate acceptance and application to various surgical procedures attest to their utility and value in arresting capillary and venous bleeding. Their mode of action in the presence of injured tissue is to mobilize thromboplastin from which, with calcium ions and prothrombin, thrombin develops. This substance with fibrinogen forms fibrin, and fibrin within the network of the absorbable foreign substance enmeshes solid blood elements. On such a lattice, new cells grow in repair of tissue damage. A clot so formed is adherent and is absorbed slowly by fibrinolysis while healing takes place.

Lying clean and buried beneath the surface, a Gelfoam or Oxycel clot presents no further problem. In proctologic surgery, however, the presence of foreign material constantly bathed with intestinal contents constitutes a different situation. By enveloping viable organisms and colonic refuse and, by mechanically preventing primary healing, convalescence may be prolonged unduly.

Another substance that promotes hemostasis is Methocel.* This material has the advantageous property of not itself entering into the clot that is formed. It is chemically a water soluble cellulose ether and physically white and cotton-like (fig. 1). It is odorless, tasteless, non-allergenic and capable of absorbing eight times its weight in fluid (fig. 2).

It may be used as follows: After major bleeding has been stopped by ligature following the usual anorectal operation, a piece of Methocel the size of the index finger is placed within the anorectum and a like amount is applied against the perianal skin. A gauze dressing and a snug perineal binder

From the Section on Proctology, Department of Surgery, Menorah Hospital, Kansas City.

* Brand of Methyl Cellulose manufactured by Dow Chemical Company.



Fig. 1. Methyl cellulose as used in anorectal surgery.



Fig. 2. 60 gr. methyl cellulose absorbing 1 ounce of water.

are then adjusted. All external dressings may be removed after an hour. The methyl cellulose pad has by this time absorbed blood and has the consistency and appearance of moist blotting paper. It can be removed easily and painlessly, leaving a dry wound. That portion of the material which was placed within the rectum to absorb additional fluid becomes gelatinous and acts as a lubricant at the time of the first bowel movement.

When Methocel is applied as a tampon to a denuded surface for ten to fifteen minutes, with blotter-like action, all fluid is absorbed and bleeding stops without visible clot formation. After having remained in situ for several hours, a grey scum appears on the part of the dressing proximal to the wound which, microscopically, proves to be a densely packed layer of platelets and leukocytes (fig. 3).

In a study of the mechanisms of hemostasis, Tocantins[1] showed that cessation of bleeding is primarily due to intravascular occlusion by platelets, fibrin or leukocytes either singly or in combination. He distinguishes three phases of clotting;

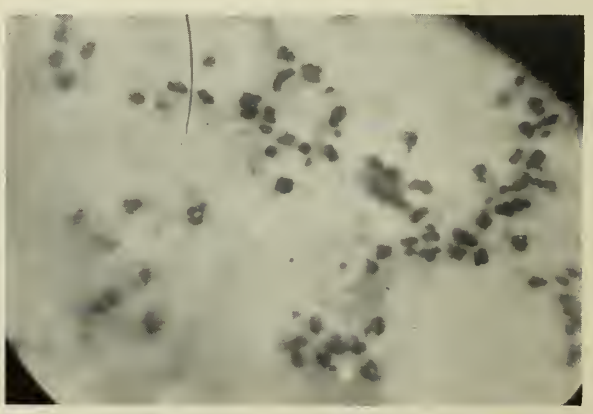


Fig. 3. Microscopic smear of scum showing platelets and leukocytes.

platelet massing, fibrin deposition and contraction of vascular plugs at the severed vessel ends. He further explains that the platelets, attracted by liberated tissue juices, adhere to form a layer over the injured parts and liberate substances which further accelerate clot formation.

The action of methyl cellulose as a topical hemostatic agent appears to be both physical and biochemical. The first and physical effect is that by mechanical pressure with the absorption of fluid the material swells to compress the vessel ends. Secondly and biochemically by retaining tissue juices, it stimulates the exudation of cellular elements which assist intravascular clotting. The cost of the material is but a few cents per patient.

Methyl cellulose possesses all of the requirements of a rectal dressing that Curtis Rosser[2] considers important. These are:

It is a true dressing, not a pack or plug.

Free drainage is permitted.

It has a hemostatic effect without undue pressure.

It allows free passage of gas from the bowel.

It is removable without pain.

CONCLUSIONS

Methyl cellulose has been used in more than three hundred cases of anorectal surgery and has been found to have the following advantages:

1. No special preparation is required.
2. The material does not adhere to the wound.
3. It does not enter into the formation of the clot, although it promotes clotting efficiently.
4. It may be autoclaved without impairment.
5. It is nontoxic and non-allergenic.
6. The cost is minimal.

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1. Tocantins, L. M.: Mechanism of Hemostasis, Ann. Surg. 125:292-310 (March) 1947.
2. Rosser, C.: New Hemostatic Dressing in Ano-rectal Surgery, South M. J. 39:921-925 (December) 1946.

POSTERIOR DISLOCATIONS AT THE ELBOW

A SIMPLE METHOD FOR REDUCTION

GENE B. STARKLOFF, M.D., *St. Louis*

Dislocations at the elbow joint frequently are encountered and follow in frequency those of the shoulder and fingers. Especially in children, posterior dislocation of the elbow joint is more frequent than dislocation of the shoulder. Usually reduction of the posterior dislocation of the elbow joint is relatively simple but often by the time the patient reaches a doctor, the swelling necessitates the use of an anesthetic in order to accomplish reduction satisfactorily.

The purpose of this article is to present a simple method of reduction for uncomplicated posterior dislocation of the elbow joint which I have found did not necessitate anesthesia and has not been painful but has accomplished entirely satisfactory reduction. No description of this method has been encountered in the literature nor has the method been described heretofore.

The patient with a suspected posterior dislocation of the elbow joint is, after clinical examination, roentgen rayed and on confirmation of an uncomplicated posterior dislocation, laid supine on any available type of table after the administration of morphine sulphate in an appropriate dose, preferably intravenously. The affected arm and forearm are allowed to hang free from the table. Any type of free falling bag is attached to the wrist and tied in place with a gauze bandage. Traction is applied by adding from five to ten pounds of weight to the bag, the amount depending upon the age and muscular development of the patient. No pain is experienced by the patient on addition of this small amount of weight to the free falling bag. After from fifteen to twenty minutes of this gentle traction, gentle forward pressure is made on the protruding olecranon and the dislocation is reduced painlessly, usually with an audible snap. Post-reduction films of the arm are obtained and the arm is dressed in the acutely flexed position, the wrist being fixed closely to the neck in a Jones collar or other appropriate means.

CONCLUSIONS

1. A simple method for the reduction of posterior dislocations of the elbow joint is described.
2. The method has proven painless and effective.
3. The principle of gentle traction to overcome muscle spasm followed by pressure forward on the protruding olecranon with minimal manipulation is the basis of the method.

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ALLERGY

A NEW CONCEPT IN TREATMENT

W. MERRIT KETCHAM, M.D., *Kansas City*

In 1940, Evans, Bodman and Maisin published a paper entitled "The Chemical Control of Allergy" and stated that it appeared to them that a departure from normal in the chemistry of cellular metabolism, involving the absence of certain catalysts of coenzyme activity, is the primary cause of allergic manifestations. They summed up the basis of their theory as follows:

"The chemical energy produced and distributed by the metabolic activity of the living cell is essential for its normal function. Abnormalities of such metabolism involving an alteration in oxidation reduction reaction within the cell are, we believe, responsible for the production of an allergic state. Such changes may be due to the effect of shock, whether infective, traumatic or emotional, generally occurring in a person rendered susceptible by inherited tendency. The site and specific nature of the cells affected would alone determine the type of allergy exhibited.

"If this is so, the fundamental need in the treatment of the allergic state will be the recovery of the normal oxidation chain involved in the production and normal distribution of cell energy. This appears to depend on the restitution of a normal carrier catalyst cycle by the provision of a substance, an oxidation catalyst, the absence of which is a direct result of the kind of trauma already referred to."

In order to appreciate the significance of the departure from normal in cellular metabolism, it will be useful to remind one's self of some of the major processes involved in normal metabolism. The animal kingdom is dependent upon the vegetable world to trap the sun's actinic energy which, by means of cholorophyl, is translated to stored clinical energy through synthesis of simple compounds such as carbon dioxide and water into carbohydrates. These carbohydrates, then, one may regard as energy (chemically) stored for body use. Therefore carbohydrate metabolism is probably the best and the easiest to summarize.

Carbohydrate is broken down and liberates energy in two ways: (1) by the breaking of carbon chains, (2) by what seems to be the ultimate aim of all cell metabolism, the union of hydrogen with oxygen to form water. It is well to remember that the term oxidation is applied just as much to the loss of hydrogen by the molecule as to the gain of oxygen and that the whole process of obtaining energy for the requirements of the body might be summed up as the splitting of water into its component parts and their eventual reassembling. In cellular oxidation the cell takes the H from the C and eventually lets it unite with oxygen to form water again, using the energy of the reaction for its own purposes. This is represented by the accompanying formula. Since the immediate oxidation

SYNTHESIS

$$\text{Energy} + n\text{CO}_2 + n\text{H}_2\text{O} = n\text{O}_2 + \text{C}n\text{H}_2n\text{O}n$$
$$\text{C}n\text{H}_2n\ \text{O}n + n\text{O}_2 = n\text{H}_2\text{O} + n\text{CO}_2 + \text{energy}$$

of the hydrogen would result in too rapid release of energy, the process of biologic oxidation provides for the gradual release of the energy of the H through a series of carefully graduated stages. This stepping down is effected by a series of enzymes. One is accustomed to think of the process of oxidation as being accomplished primarily by oxygen but, in cellular chemistry, it is now known that through the activity of what are known as oxidation reduction processes the more important factor is the transfer of the hydrogen atom. The various stages in the breakdown of carbohydrates by the breaking of carbon chains are accomplished through the action of a series of enzymes known as dehydrogenases whose function it is, in the presence of a suitable acceptor, to split off hydrogen atoms. One typical example of this is the change from lactic acid to pyruvic acid which simply involves the loss of two atoms of hydrogen from the lactic acid as follows. In carbo-

$$\underset{\text{(Lactic Acid)}}{\text{CH}_3.\text{CHOH.COOH}} - \underset{\text{(Pyruvic Acid)}}{\text{CH}_3.\text{CO.COOH}} + 2\text{H}$$

hydrate breakdown, a series of dehydrogenases or hydrogen carriers is required. Absence of any one of them would upset the whole series of reactions. The 2H is passed by this series of hydrogen carriers or acceptors from one to the other until the point is reached at which the activated oxygen is met. Each stage of hydrogen acceptance and transmission involves the presence of a suitable activator and transmitter. The so-called process of oxidation involves a chain of hydrogen carriers and a chain of oxygen or electron carriers in which the O_2 does not take any part until the

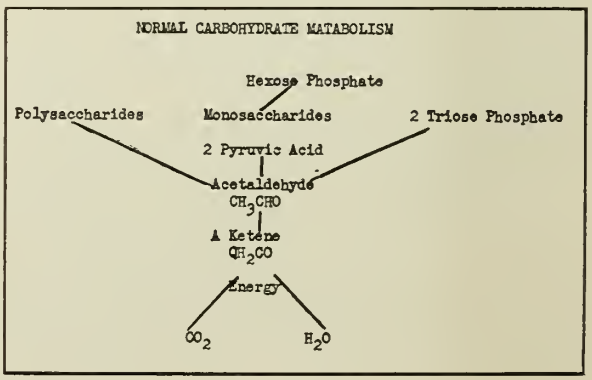


Fig. 1.

end of the process where it unites with H to form water. It thus can be seen that the function of the dehydrogenases, the hydrogen acceptors and the oxygen activators are vital to the whole process of biologic oxidation and hence to life, since all vital energy is derived from the gradual approach of the H to the O and the eventual union with O to form water. Thus any breakdown in any phase of the process not only would interfere with the normal production of energy but will in all probability result in abnormal chemistry which would have far reaching results.

The steps in carbohydrate metabolism can be shown by figure 1 which shows that the polysaccharides are reduced to monosaccharides or hexophosphates which are then split into two trios, to phospho-pyruvic acid, which then loses its phosphate, leaving pyruvic acid. Pyruvic acid is then broken down into acetaldehyde and eventually momentarily to a ketene which is CH_2CO. The ketene being the final breakdown product of a carbohydrate, oxygen would enter the molecule leading to formation of carbon dioxide and water and the release of energy. It thus will be seen that hydrogen acceptors play a prominent part in cell oxidation. Occasionally they may be organic substances which arise in the course of metabolism, but the cell also contains a number of complicated molecules which obviously are specialized as hydrogen acceptors. In composition, they are complicated, but most of them carry this property in common, namely, they can be reduced and oxidized reversibly and their oxidation entails a transference of hydrogen to molecular oxygen with the formation of water. A good many substances which act as hydrogen transporters are known. I would like to name briefly four:

(1) Glutathion is a relatively simple organic substance, a tripeptide formed from one molecule each of glutamic acid, glycine and cystine, and is capable of acting as a part of the hydrogen transporting mechanism. It is concerned with the oxidation of certain unsaturated fatty acids.

(2) Cytochrome is an iron containing pigment allied to haem, the pigment which, combined with a protein, globin, constitutes hemoglobin. The cytochrome is reduced and oxidized actively, that is, it receives hydrogen and parts with it again. Both processes are catalyzed by enzymes and normally do not take place in the absence of enzyme action. Again the responsible enzymes are called dehydrogenases. If dehydrogenation is to take place, hydrogen must be incorporated into some molecule, the "hydrogen acceptor" which when reduced is free to accept hydrogen again. (Figure 2.)* Cytochrome is now known to be concerned mainly with the oxidation of succinic acid and the glycerophosphates. It is interesting to know that when interruptions occur in the cytochrome oxidation process, vitamin B_1 is lost through the incomplete reduction of pyruvic acid, the accumulation of pyruvates in the tissue and the resulting polyneuritis for which vitamin B_1 is now so commonly known to be effective.

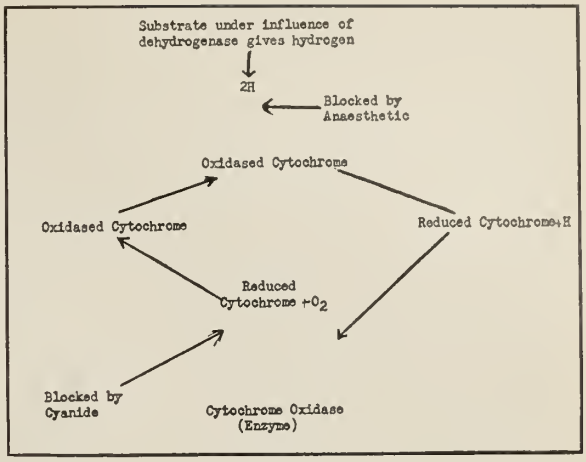


Fig. 2.

(3) Warburg's yellow pigment contains no iron, is capable of being reversibly oxidized and reduced just as cytochrome and, evidently, provides an alternative path of oxidation to that furnished by the cytochrome system. It is concerned mainly in the oxidation of hexo-mono-phosphates and it is interesting to know that in changes in oxidation in this system it is the vitamin B_2 which is lost and which is the vitamin responsible for the development and symptoms of pellagra.

(4) Vitamin C or ascorbic acid is a carbohydrate in nature, is a powerful reducing agent and is capable of reversible oxidation and reduction in the tissues. What exact bearing this property has upon its effect in preventing the occurrence of scurvy in man is yet to be learned. This may be one of the explanations why vitamin C in massive doses, intravenously, sometimes will relieve an acute attack of asthma.*

The complex reactions which are entailed in oxidation can be inhibited or paralyzed by certain pathologic changes as well as by such narcotics as morphine, anesthetics (especially chloroform), barbiturates, alcohol, tobacco in heavy amounts, any of the cyanate compounds, the sulfa drugs, possibly even aspirin. The toxins of certain intestinal organisms and many bacteriotoxins have been shown to inhibit the hydrogenase reactions. It also has been shown by Goldy and Sanders that the ketene can destroy the anaphylactic power of antidiphtheric serum without effecting its antitoxic power and does so by blocking the amino group, and, it has been suggested that the normal defense of the body against allergic attacks is by the continual formation of such a substance as ketene by tissue cells in their normal metabolic processes. Simply explained, this merely states that abnormal products of faulty oxidation processes act by irri-

* Holmes, The Metabolism of Living Tissue, Cambridge University Press.

* For detailed information, see Clifford Bartlett's article on the "Chemical Nature of Allergy" or the "Metabolism of Living Tissue" by Holmes.

tating the cell, producing a tissue reaction which is known as allergy. If this condition persists, there results a conditioned reflex in the tissue which may manifest itself in an individual as migraine, asthma, persistent urticaria, perennial hay fever or eczema. Treatment would therefore be designed to reestablish the normal channels of breakdown via a ketene and this might be accomplished by the use of such an oxygen carrier catalyst as might replace that part of the dehydrogenase coenzyme system which is absent. It was suggested in the theory advanced by Evans and his coworkers in 1940 that the missing catalyst would be a short carbon chain compound having two or more unsaturated carbon linkages. Consequently a number of such bodies were produced, the most satisfactory of which is the one based on ethylene disulphonic acid, the suggested formula of which is given in figure 3.

Ethylene disulphonate was prepared in the dilution of 1 to 10 diluted to the fifteenth power which corresponds approximately with the dilution in which such substances generally are found in normal tissue. This dilution has been the object of some criticism but there are a number of substances in dilution comparable to this preparation of Ethylene Disulphonate which are vital to life or have been shown to have a definite effect.

The next part of this paper will be devoted to a report of cases in which Ethylene Disulphonate* has been introduced into the body chemistry and, in a large proportion of cases, it seems to behave in a manner which would be anticipated were it indeed the catalyst actually present in normal health. There is no attempt on the part of Evans and his coworkers to say that this material is the actual oxidation catalyst present in normal health. It should be stated in the beginning that this group of cases does not represent a selected group of cases in which the best results would be anticipated, but comprises every case of allergy which has been submitted for treatment, regardless of the severity of the symptoms, the age, or the presence of complicating conditions such as bronchiectasis, polypoid degeneration of the nasal mucous membrane, nasal sinus disease.

On account of the statement previously made in the discussion of cellular metabolism, that certain materials have a tendency to inhibit dehydrogenase and the oxygen carrier system, I exclude from the intake of the individual tobacco in large amounts —six to eight cigarettes are allowed—alcohol, barbiturate preparations, opiates of all kinds, aspirin and the sulfa drugs. Provision is made in the dietary for an adequate energy type of diet. The protein intake should be 1 gram per kilogram of body weight. A high vitamin intake is provided in which there should be two to three times the normal requirements in the A B C and D groups. These restrictions are placed on the patient for a week before the first injection and continued for at least

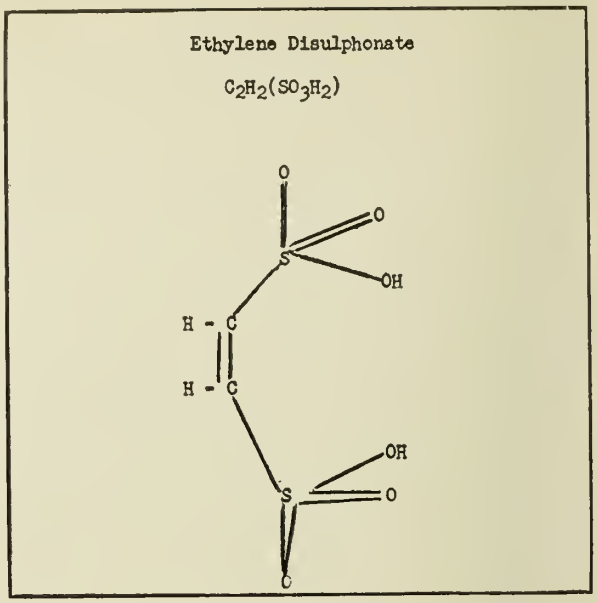


Fig. 3.

three weeks after the last injection and, in the case of alcohol and the reduction in smoking, for at least nine weeks. It has been suggested by other workers, and I have followed this suggestion, that the intestinal tract be thoroughly cleaned out before the first injection and subsequently at weekly intervals for nine weeks after the last injection and this is accomplished by two teaspoons of salt in a quart of warm water, taken each morning for three consecutive mornings the week before the first injection and once weekly thereafter. This results in a large copious elimination and, as it can do no harm to the individual, I have followed the suggestion. In some cases, especially in children there is difficulty in swallowing the quart and, when this is the case, I have suggested the use of either Citrate of Magnesia or Milk of Magnesia.

The standard dosage of Ethylene Disulphonate is 2 cc. administered by intramuscular injection. The injections in adults are given in the deltoid muscle and in younger children into the gluteal muscle. The injection into the muscle usually is followed by an uncontrollable localized fibrillation of the muscle lasting from one to three minutes. The injections are somewhat painful but the pain usually is confined to the immediate area of injection and is of a few minutes duration. In no case has there been any local after effect from the injection. In rare cases, there has been a fall in blood pressure with some symptoms of shock. This has been proved to be self limited and of no particular importance but, if this should occur, an injection of Coramine promptly controls the situation. In the treatment of fairly acute cases, injections may be followed by a short period of from twenty-four to forty-eight hours, sometimes even four or five days, of an exacerbation of the condition and in several cases, fever and general prostration have occurred along with the exacerbation of the symptoms. Dr.

* Supplied by the Spicer-Gerhart Company, Pasadena, California.

Bartlett states that he thinks this indicates that there is an actual infection in addition to the allergy in the patient who shows this type of reaction. In the chronic cases, the course usually follows one of three paths: (1) a gradual improvement which is definite, beginning with the first injection, (2) exacerbation of the symptoms which may occur within from twenty-four to forty-eight hours, or later, during the treatment, and frequently occurring in multiples of seven days, at intervals of three, six and nine week periods (reactive signs have been in almost all our cases a favorable sign for the future), (3) those which show no change in condition.

The dosage intervals have varied considerably. In children, it has been the usual routine to give one injection and then to wait nine weeks. If at the end of nine weeks, there has been a gradual improvement, but the patient is still having symptoms, the second injection has been given and possibly a third at the end of another nine weeks. If complete relief is evident from one injection, no other injections have been given. In the acute cases in which there is a status asthmaticus or an acute eczematous condition, an injection every twenty-four hours for three injections has been used, or three injections have been given at weekly intervals and then a nine week waiting period from the last injection. In migraine, I have found that those patients taking gynergen or who have been taking it for a long period of time require more intensive treatment and are more likely not to have as good results as those who have not had gynergen. It has been my policy as more experience has been gained with this material to give three injections a week apart in migraine patients and, when gynergen has been used, three injections at twenty-four hour intervals. In three weeks, if no relief is evident, three more injections may be given at daily or weekly intervals, depending upon the severity of the case.

The eczematous adult patient I find the most resistant to treatment. I believe that some of the failures in this particular group of cases have been due to not using a larger dosage in the beginning; and this I believe can be investigated more thoroughly in the next year or two. The eczemas in allergic children seem to respond more quickly than any of the other forms of allergic manifestations.

The perennial hay fever sufferer has been a difficult case to handle, and it will be noted in the table in reporting the percentage of improvement that only a few of the patients report 100 per cent relief. The majority of these patients have reported from 50 to 75 per cent improvement and it may be that in the next year or two, their improvement will be more marked. This certainly has been the case of patients treated a year and a half ago compared with the results of patients treated in the last six months. As to what results this material may show in the contact dermatitis cases and the contact hay fevers, such as autumnal hay fever,

Table 1. *Total Number of Cases Treated* 180

Allergy	*No. of Cases*	*Result of Treatment*	*No.*	*Per cent*
Asthma	94	Complete relief	49	52
		50-75%	30	32
		None	15	16
Migraine	25	Complete relief	16	64
		50-75%	4	16
		None	5	20
Perennial Hay-fever	44	Complete relief	11	25
		50-75%	32	73
		None	1	2
Eczema	9	Complete relief	3	33⅓
		50-75%	6	66⅔
		None		
Urticaria	8	Complete relief	3	37½
		50-75%	3	37½
		None	2	25

TOTAL NO. OF INJECTIONS	1	2	3	4	5	6	9
	15	18	75	13	10	45	4

The total number of patients treated to June 1, 1948, numbers approximately 350 and the percentages given in the table will not vary 5 per cent.

only continued treatment of a group of these cases will tell. At the present time, I have quite a number of patients who have been treated for asthma which is seasonal and who have seasonal hay fever. Reports from these cases show that they have been benefitted especially as regards the eye symptoms and the recurrence of their seasonal asthma.

It has been observed in these series that, after treatment, patients suffering from food allergy have been able to eat with almost impunity those foods which hitherto certainly provoked attacks. Almost all have stated that they are in better general health, and it has not been an uncommon thing for the asthmatic to gain from ten to twenty-five pounds in weight in the course of a year to sixteen months. In the asthma patient, I have found that when previously a cold or a sinus infection almost always meant severe asthmatic recurrence, that they have been able to overcome a cold without their asthmatic seizure.

That subsequent recurrence of allergy may appear in those at present symptom free is of course possible, but only observation over a much longer period of time will determine this fact. Certainly the degree to which patients revert to a normal physiologic state is in all probability variable. The fact remains that the same factors which establish the allergic manifestations in the first place may occur later.

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EXPERIENCES WITH CARDIOLIPIN ANTIGEN

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AND
VIRGIL C. SCOTT, M.D., *St. Louis*

In 1941, Pangborn[1] described the isolation of a phospholipid, cardiolipin, and a purified lecithin from beef heart. Since then a rather extensive experience with the use of cardiolipin-lecithin-cholesterol antigens in the serodiagnosis of syphilis has accumulated. The development of this new antigen has been accepted widely as an outstanding achievement.

The position of cardiolipin in the history of serologic tests for syphilis deserves mention. In 1906, Wassermann applied the Bordet-Gengou phenomenon of complement fixation to a study of syphilitic sera, using an aqueous extract of syphilitic fetal liver as the antigen. In 1907, Marie and Levaditi reported that aqueous extracts of normal liver also were antigenic, and in the same year Landsteiner demonstrated the active factor to be in the alcohol-soluble fraction. In 1911, Noguchi and Bronfenbrenner found that the acetone-insoluble portion of ether and alcohol extracts of human liver and animal heart and liver were still more active and more specific when used as antigens in serologic tests for syphilis.

During the succeeding thirty years, many complement fixation, tube and slide precipitation technics appeared, all utilizing antigens essentially as described by Noguchi and Bronfenbrenner.

Cardiolipin represents the first antigenic fraction to be chemically pure, of known constant composition ($C_{120}\ H_{208}\ O_{24}\ P_3\ Na_3$; MW 2195) and reproducible. As a non-nitrogenous phospholipid it acts as an acid and forms salts of varying stability with barium, sodium and cadmium. The varying solubility of these salts is the basis for the purification and extraction procedure. Cardiolipin is not a complete antigen and must be used with a purified lecithin and cholesterol. A purified lecithin as prepared by Pangborn is essential to the preparation of the antigen which, according to the procedure used, contains various ratios of cardiolipin, lecithin and cholesterol. The percentage composition for use with the Kolmer complement fixation technic is cardiolipin 0.03 per cent, lecithin 0.05 per cent and cholesterol 0.30 per cent.[2] Brown[3] has described ratios for use with diluted and undiluted serum in the macro-precipitation test. The micro-precipitation tests have been more widely used.[4, 5, 6] Harris, et al, have used the percentage ratios of cardiolipin 0.03 per cent, lecithin 0.27 per cent and cholesterol 0.9 per cent in the Venereal Disease Research Laboratory test.

It has been shown by some that the cardiolipin-lecithin-cholesterol antigens have added a greater sensitivity and specificity to the test procedures for which they have been adapted.[4, 7, 8] Most data have been obtained with the use of the cardiolipin antigen in micro-flocculation procedures. Rein and Bossack[4] found the cardiolipin micro-flocculation test more sensitive than the Mazzini and Kline diagnostic tests. In primary and latent syphilis, Andujar, et al[7] found the cardiolipin slide test (Kline technic) more sensitive than the standard Kahn, Kline diagnostic, Kolmer regular and cardiolipin tests. The sensitivity was also high in secondary and tertiary syphilis.

In reference to specificity, most studies indicate a greater general specificity and a particular specificity in malaria. The absence of false biologic positives in malaria is strikingly demonstrated in the reports of Rein and Bossack[4] and Levine, Kline and Suessengueth.[8] Also of interest are the results of Stout[9] who found in 329 sera, all negative by Kahn, Kolmer, Mazzini and Kolmer cardiolipin tests, thirty-four with doubtful or positive reactions by the cardiolipin slide test. Of ten who were studied further, seven were found to be treated syphilitics, one had chickenpox, one malaria and the tenth, sulfonamide intoxication. In treated syphilis, the persistence of positive tests by the cardiolipin micro-flocculation procedure may introduce a new problem. Andujar, et al,[7] report three such instances. Apparently Brown[3] did not encounter persistent positives after treatment when tested by cardiolipin complement fixation and macro-precipitation tests.

Further evidence for the greater specificity is supplied by study of nonsyphilitic sera as reported by Levine, et al.[8] In 24,511 such sera the Kline exclusion was positive in 231, or 0.93 per cent, the Kline diagnostic in sixty-seven, or 0.27 per cent and the cardiolipin micro-flocculation in seven, or 0.028 per cent.

The United States Army Medical Department, after extensive experience with cardiolipin antigen, has announced[10] the adoption of the U.S.P.H.S. Venereal Disease Research Laboratory cardiolipin micro-flocculation procedure, and the New York State Department of Health cardiolipin complement-fixation test as standard tests.

Some comment should be made regarding the production of cardiolipin and lecithin. Cardiolipin has been patented and, at the moment, is being produced commercially only by Lederle Laboratories and the Lamotte Chemical Company. There

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Presented at the Laboratory Section, Missouri Public Health Association, St. Louis, May 12, 1948.

Director, Barnes Hospital Laboratories, and Assistant Professor of Internal Medicine and Pathology, Washington University School of Medicine.

Assistant Professor of Internal Medicine and Preventive Medicine, Washington University School of Medicine.

has been variability in some lots of the purified lecithin until recently, but now it is said to be of uniform good quality.

The Serology Division of the Barnes Hospital Laboratories has used the Venereal Disease Research Laboratory cardiolipin slide test for almost a year. The supply of the prepared antigen has been obtained from Dr. John F. Mahoney of the Venereal Disease Research Laboratory. It contains 0.03 per cent cardiolipin, 0.27 per cent lecithin and 0.9 per cent cholesterol. Clear sera are used and inactivated in the customary manner. We have employed the A. H. Thomas flat-bottom-well slides rather than paraffin-ringed slides. The antigen emulsion used in the test is prepared in 5 ml. amounts by diluting the stock antigen to ten times its volume with a buffered formalized 1 per cent saline. The antigen emulsion delivery needle is adjusted to deliver approximately 60 drops per ml. The test consists of pipetting 0.05 ml. of heated serum into the ring or well. One drop (1/60 ml.) of antigen emulsion is added to the serum. The slides are rotated for four minutes in a Boerner type rotator, then read immediately. The absence of clumps is read as negative. Small clumps, readings of plus-minus and one plus, are reported as doubtful, and medium and large clumps, two to four plus, are read as positive. Zonal reactions are recognized by the appearance of clumps of varying size intermingled with free antigen particles. Such sera are retested in dilutions of 1:5 and 1:25.

Quantitative tests are made of sera in dilutions of 1:2, 1:4, 1:8, through 6 dilutions. The highest dilution giving a positive reaction (2 plus or higher) is reported.

Our experience has not been large and not entirely consistent with results reported by others, but certain conclusions appear justified. In about 1,800 sera tested, we found that the cardiolipin test was often positive in lower dilutions than the quantitative Kahn. The Kahn antigen used was that distributed by the St. Louis Health Division Laboratory. Insofar as being positive together, and negative together, the two tests showed a close correlation.

Our Kahn test may be unusually sensitive, but in the annual surveys in which more than thirty laboratories participate, our readings are generally lower than those of the average for the participating laboratories. The Venereal Disease Research Laboratory procedure has been followed exactly and we are unable to explain a lower than expected sensitivity for our quantitative cardiolipin test procedure.

An analysis of particular cases, however, leads us to the conclusion that the Venereal Disease Research Laboratory cardiolipin slide test has greater sensitivity and specificity than the standard Kahn test. There were four cases in which the cardiolipin test was positive and the Kahn negative. On investigation it was found that all four were cases of late syphilis which had been treated.

Table 1. *Kahn Positive (40 KU) Cardiolipin Negative*

PT	*CDLPN*	*KAHN*	*DIAGNOSIS*
FS	Neg	120 KU	Suspected G.I. tumor
VB	Neg	440 KU	Infectious mononucleosis
MC	Neg	256 KU	Fever of unknown origin
GP	Neg	80 KU	Menopausal syndrome
SM	Neg	40 KU	Menopausal syndrome
JC	Neg	80 KU	Goitre
AR	Neg	160 KU	Rheumatoid arthritis
GW	Neg	120 KU	?Syphilis
CT	Neg	40 KU	Late latent syphilis

Of equal interest were nine cases in which the quantitative Kahn gave readings of 40 units or higher, and in which the cardiolipin test was negative (table 1). All were thoroughly studied and in seven syphilis could be ruled out. Two cases were of particular interest. The first, a case of infectious mononucleosis, had a quantitative Kahn of 440 units. The second, an acute febrile episode of undetermined cause, had a quantitative Kahn of 256 units. Serial specimens were studied by Dr. Neurath at Duke and were reported as false biologic positives. One of the nine cases was suspected of having syphilis, and another was a case of late latent syphilis.

SUMMARY AND CONCLUSIONS

A brief history of the development of serologic tests for syphilis has been presented.

The nature of cardiolipin and use of cardiolipin-lecithin-cholesterol antigens has been reviewed. These antigens, particularly as employed in microflocculation tests have been demonstrated to be more sensitive and more specific than any others available to date. They also have the distinct advantage of being stable and reproducible.

At the Barnes Hospital, the Venereal Disease Research Laboratory slide test has been compared with the standard Kahn test in a study of 1,800 sera. Regarding the tests being positive or negative together, there was a high correlation. Contrary to the general experience, in routine tests of syphilitic sera, the cardiolipin test was often positive in slightly lower dilutions than the quantitative Kahn test. However, of nine cases with Kahn titers of 40 units or higher, and negative cardiolipin tests, seven were found not to have syphilis, one was suspected of having syphilis and one was an instance of late latent syphilis. There were four cases in which the cardiolipin test was positive and the Kahn test negative. All were found to be cases of treated late syphilis.

The data accumulated during this limited experience would indicate the Venereal Disease Research Laboratory cardiolipin slide test to be simpler, more sensitive and more specific than the standard Kahn test.

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USEFUL LABORATORY PROCEDURE

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The universal shortage of hospital beds has served to change the relationship between the practicing physician and the medical laboratory. As long as there were sufficient hospital beds, it was widespread practice to place patients with diagnostic problems in the hospital for complete laboratory workups. This was particularly true with patients who had Blue Cross and other similar insurance.

Now the picture has changed. Hospitals usually insist on an established diagnosis before entry. Hence the physician is depending more and more on the private laboratory for diagnostic laboratory procedure. But here the economic factor plays an important part. Blue Cross and similar insurance plans will not pay for laboratory procedure unless done in the hospital. And the private laboratory is not subsidized as is the average hospital laboratory, hence the cost of each procedure is more. Therefore, the physician must be careful in his selection of tests to be done. The purpose of this paper is to aid in this selection.

Certainly a complete blood count is in order, and a urinalysis. Syphilis is the well known joker in medicine, similating almost any disease so a test for this disease probably should be done on all patients with a diagnostic problem. But order one of the cheaper tests such as the Kahn or Kline rather than the more expensive Kolmer or Wassermann for exclusion purposes. Probably the best laboratory test for the degree of the severity of an illness is the sedimentation rate, so perhaps it may be part of the routine laboratory procedure.

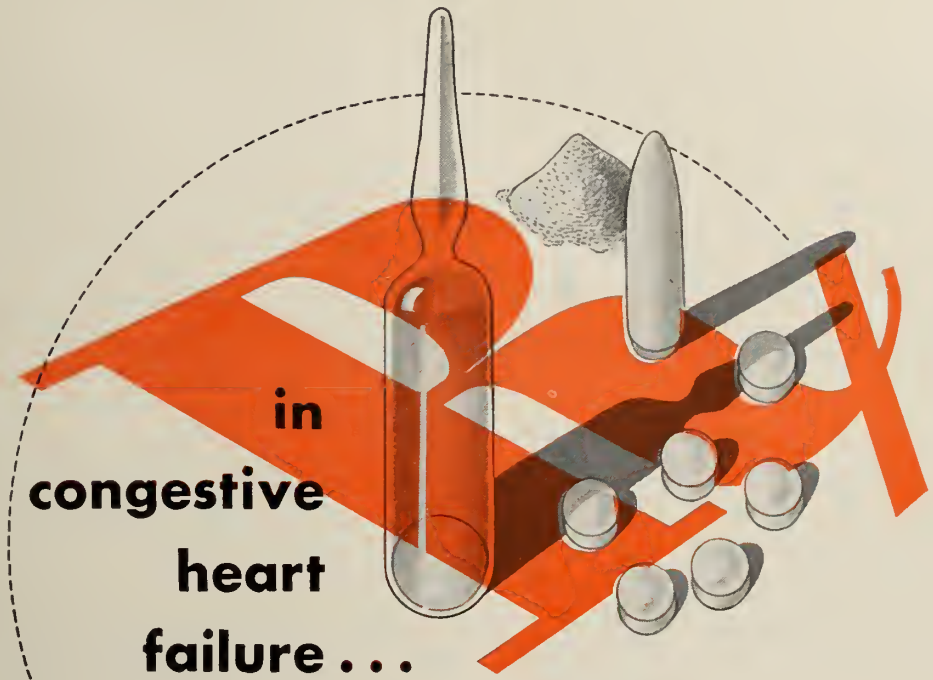
This routine in most cases will provide a physician with all the laboratory information he needs but in some cases will merely point the way to other tests needed to be performed.

In case these tests reveal a leukopenia, the patient's complaints are vague, and he is running a fever it is so easy to order "the agglutination tests." But from the economic standpoint it is the physician's duty to do better than this. Textbooks and his own knowledge will tell him that the possibilities include typhoid fever, influenza, tuberculosis, undulant fever and certain other conditions. But, clinically, one should be able to narrow the agglutination tests down to the one indicated. If the patient is an ex-GI, one knows that he has had enough inoculations to render the possibility of the typhoid-paratyphoid group almost nil. Furthermore, if the patient has been ill for a number of months it not only virtually rules out the typhoid group but also the Richettsial group. Tuberculosis as a rule has its own set of clinical symptoms, as does influenza. Therefore it is obvious that in many cases only one agglutination test is indicated, namely the one for undulant fever.

Quite frequently the differential blood count reveals immature cells along with a normal or somewhat elevated total white blood count. Here again good judgment is needed in the selection of further procedure. This type of patient frequently gives vague complaints and may have some palpable lymph nodes. Before excising a lymph node for histologic study on the basis of leukemia or Hodgkin's disease, it is probably best to study the patient a bit further and then confer with the pathologist. If the illness is acute or subacute and particularly if it started with an ordinary upper respiratory infection it is quite possible that the relatively simple and inexpensive Paul-Bunell test will establish the diagnosis of infectious mononucleosis, a disease, by the way, much more prevalent than is ordinarily supposed. If this is not indicated, it might be best just to sit tight, treat the patient with supportive measures, and repeat the white count and differential at monthly intervals which, in the average case, is sufficient to prove or disprove leukemia and there is still plenty of time to excise a lymph node for a possible Hodgkin's disease.

The cardiac case, particularly the acute case that is probably a coronary occlusion, presents some special consideration from a laboratory standpoint. Those in the laboratory know that any changes capable of being shown on an electrocardiogram take a number of days to develop. Yet, a laboratory frequently is asked to rush out and do an electrocardiogram a few hours after the attack has occurred. If one clinically is convinced or even suspicious of coronary artery occlusion, it is much more sensible to keep the patient in bed, treat him symptomatically and then call the laboratory a week later. Should the patient then show electrocardiographic evidence of coronary occlusion (thrombosis type), the laboratory tests needed are more or less contingent upon the type of treatment.

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From where I sit
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The "Dutch" Millers celebrated their Tin Wedding Anniversary Saturday. Everything had to be tin. Folks even ate off tin plates, and drank coffee out of tin cups.

When it was time to drink a toast to the "bride and groom," out came the final touch: cold beer in cans. And come the Millers' 15th anniversary (Glass) I expect we'll be toasting them with sparkling beer in *bottles!*

And I just couldn't help thinking that there was a real lesson for married folks in the way that Dutch and his missus have got along together—in their policy of live-and-let-live, with never a criticism of each other's differences in taste.

From where I sit, it's due to two things: Temperance—as that moderate preference for beer suggests, and Tolerance—for their own differences of opinion—and for the tastes of others, whether applied to beer, to politics, or how to celebrate an anniversary.

Joe Marsh

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Surgical Anatomy & Clinical Surgery, two weeks, starting February 21, March 21.
Surgery of Colon & Rectum, one week, starting March 7, April 11.
Surgical Pathology every two weeks.
GYNECOLOGY—Intensive Course, two weeks, starting February 21, March 21.
Vaginal Approach to Pelvic Surgery, one week, starting February 14.
OBSTETRICS—Intensive Course, two weeks, starting March 7.
MEDICINE—Intensive Course, two weeks, starting April 4.
Personal Course in Gastroscopy, two weeks starting March 7.
PEDIATRICS—Intensive Course, four weeks starting April 4.
DERMATOLOGY—Formal Course, two weeks, starting April 18.
Clinical Course every two weeks.
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Probably the only two tests indicated in the usual case are the sedimentation rate and the white count and differential, both of which will give considerable information as to progress. But the changes are slow. Do not waste the patient's money by ordering them daily; once a week is every bit as informative. Most clinicians prefer to have their patient in the hospital before they treat a case of coronary occlusion with Heparin or Dicumarol as frequent prothrombin time estimations and tests for blood in the urine are necessary as a guide to dosage of either of the above. However, once again the hospital bed shortage often prohibits this. However, having the laboratory make a trip to the home each day for a month to obtain specimens of blood and urine for the tests becomes quite expensive. But obtaining the blood and mixing it and obtaining the urine specimen is quite simple. I encourage the physician on the case to be present the first day when the specimens are obtained and thereafter to obtain them himself daily or every other day depending upon how often he is to call on the patient anyway, then take the specimens to his office where they may be picked up on routine pick-up trips. By this means the laboratory cost is cut practically 50 per cent.

Liver function tests are a headache to any laboratory. The mere fact that there are so many should tell the story. This clearly indicates that none are satisfactory and such is the case in my experience. Perhaps, the liver function test in best repute at present is Hangar's cephalin flocculation test. This test has the advantage of simplicity and is applicable to jaundiced and non-jaundiced individuals; apparently it has proven of most value in relation to prognosis in cirrhosis of the liver. However, in the presence of jaundice more information probably can be obtained from the blood cholesterol-cholesterol ester determinations along with the icteric index. Once again in the latter do not expect rapid changes. One sees daily icteric indices ordered where one a week or every two weeks would be much more economical and every bit as informative.

Both autogenous and stock vaccines have come to be used more in the last two years after having fallen into comparative disrepute. These vaccines do have a place in medicine but careful selection both of patients and bacteria used must be done. They may be found useful and sometimes even miraculous in certain skin conditions wherein other causes have been ruled out (fungi, contact) and where a definite strongly hemolytic staphylococcus or streptococcus has been grown from the lesions. An autogenous vaccine to be potent must be prepared from freshly grown organisms which latter are to be inactivated but not completely killed. Do not ask the pathologist to make a vaccine from organisms which he feels are not suitable as the results will be disappointing.

Basal metabolism tests may be of great aid, of little aid or even be a source of misinformation. Even when basal conditions are adhered to closely there are a great many possible sources of error. Perhaps the most frequent of the latter are uncomfortable beds used, noisy offices and untrained personnel. This test should be done only by a graduate technician or by no more than one student under her immediate supervision. No conversation should be permitted in the basal metabolism room other than the necessary instructions to the patient. Even under the best of conditions I feel that a blood cholesterol determination should be made also and if the two do not agree either trust the cholesterol reading or repeat the basal metabolism on another day.

A physician may have his own laboratory even though he is an internist and not a pathologist. This is apt to be rather an expensive luxury. Most city medical laboratories require the support of about fifty doctors if they are to succeed. Yet they require little more in the way of personnel or equipment than does the laboratory in the physician's own office until they do laboratory work for more than fifty doctors. Having one's own laboratory one sees no need for the pathologist run laboratory, but in certain instances one does. The physician feels that he is quite capable of diagnosing gonorrhea on a stained slide or of evaluating properly a positive test for syphilis and he is probably quite correct in this assumption. But can he prove it in court? I would advise a physician to have positive tests of this nature rechecked by a pathologist run laboratory.

1306 Bryant Bldg.

TEST SENSITIVITY TO STREPTOMYCIN

Few patients have allergic reactions to streptomycin ointment, report Leon Goldman, M.D., and Milton D. Feldman, M.D., of the Department of Dermatology and Syphilology of the College of Medicine of the University of Cincinnati, Cincinnati, Ohio.

The physicians describe their findings in the October 30 issue of *The Journal of the American Medical Association.*

Not one of 212 persons tested by the physicians showed sensitivity to streptomycin ointment. In a series of 300 patients treated with streptomycin ointment, only three developed skin rash from the drug. The ointment is valuable in treating superficial skin infections, the study shows.

PRESIDENT'S PAGE

The Committee on Awards of the Association chose W. Harry Barron, M.D., Fredericktown, as the Outstanding General Practitioner in Missouri. His name was submitted to the American Medical Association for the consideration of that group for the award given annually to the Outstanding General Practitioner at the midwinter meeting, now in session in St. Louis.



All who know Dr. Barron love him. This kindly man has devoted forty-four years of his life to the service of his patients in the lead mining area near Fredericktown. He has delivered 2,600 babies during his lifetime, in homes or hospitals. He was one of the first persons in his home county of Madison to drive an automobile. This followed many years of horse and buggy driving in the practice of his profession. The story of his life is published in this issue of The Journal.

His lifetime of service should be an inspiration to all. Personally, I am proud to know him.

Robert Mueller M.D.

THE JOURNAL
of the
Missouri State Medical Association

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DECEMBER, 1948

EDITORIALS

THE NINETY-FIRST ANNUAL SESSION

The Ninety-first Annual Session of the Missouri State Medical Association will be held in Kansas City, March 27, 28, 29 and 30, 1949. Scientific sessions and the House of Delegates will convene in the Municipal Auditorium and all technical and scientific exhibits will be in the Auditorium. Luncheon and dinner meetings and the Annual Banquet in Honor of Past Presidents will be held at Hotel President.

The program for the session is nearing completion. It includes many out of state speakers as well as Missouri physicians. Planning of the program was based on responses to cards sent to members asking for their wishes of persons for the program and subjects to be discussed.

Committees of the Jackson County Medical Society who will cooperate with officers of the Association in the Session follow:

Executive Committee: Victor B. Buhler, M.D., Chairman; Arthur N. Altringer, M.D., and C. Edgar Virden, M.D.

Exhibits: F. Stanley Morest, M.D., Chairman; William C. Schaerrer, M.D., Williston P. Bunting, M.D., John N. Walker, M.D., and Mark M. Marks, M.D.

Hall and Arrangements: Max Goldman, M.D., Chairman; David Littauer, M.D., and Paul A. Keinberger, M.D.

Publicity: J. H. Danglade, M.D., Chairman; J. H. O'Neil, M.D., and J. A. Growdon, M.D.

Entertainment: Richard A. Twyman, M.D., Chairman; Will R. Eubank, M.D., and Frank B. Leitz, M.D.

Finance: Thomas A. Kyner, M.D., Chairman; Harvey P. Boughnou, M.D., and Orval R. Withers, M.D.

Hotels: J. W. Downey, M.D., Chairman; Martin P. Hunter, M.D., David B. Morgan, M.D., R. C. Fredeen, M.D., Edward H. Klein, M.D., Robert J. Murphy, M.D., M. L. Friedman, M.D., and Robert A. Moore, M.D.

Past Presidents' Banquet: Morris B. Simpson, M.D., Chairman; J. R. McVay, M.D., A. N. Lemoine, M.D., G. Wilse Robinson, Sr., M.D., Fred B. Kyger, M.D., A. W. McAlester, Jr., M.D., and R. Lee Hoffmann, M.D.

WHERE LIFE IS LONGEST

The Middle West ranked high in a geographic breakdown of life tables computed by the Metropolitan Life Insurance Company recently. Missouri was the thirteenth state in the average length of life among white males. Nebraska ranked first with Iowa and Kansas both also coming in the first six states. In each of the six top ranking states, the average length of life in 1939-1941 was more than 65 years among white males and more than 69 years among white females.

Missouri, ranking a little lower than Arkansas and Oklahoma, which came within the upper twelve, showed expectation of life at birth as 63.50 for white males and 67.82 for white females and an expectation of life at 40 years of age as 30.84 and 34.08.

In the highest ranking state, Nebraska, the average length of life was 66.25 years for white males and 70.04 for white females. These figures exceed by more than nine years the poorest records, 56.83 years for white males in Arizona and 60.96 for white females in New Mexico.

Interstate migration is not taken into account in the figures and this would influence several states. However, in general, the agricultural states which enjoy relatively high standards of living are at the top of the list with respect to longevity. The essentially industrial states are clustered in the middle of the listing.

NEWS NOTES

Hugh G. Hamilton, M.D., Kansas City, was elected secretary of the Section on Obstetrics of the Southern Medical Association at the recent session.

A scholarship in public health is being established in honor of the late Joseph F. Bredeck, M.D., St. Louis.

David E. Musgrave, M.D., Excelsior Springs, assumed the office of mayor of Excelsior Springs on October 11.

Edward E. Robinson, M.D., Adrian, was guest at a reception held in his honor on October 10 in the Adrian high school auditorium.

Max Goldman, M.D., Kansas City, read a paper on "Foreign Bodies Observed in the Bladder" before the Central Section of the Neuro-Psychiatric Association on October 29.

Richard L. Sutton, Jr., M.D., Kansas City, addressed the Cancer Institute of the Iowa State Department of Health at Washington, Iowa, on October 28. He spoke on "Cancer of the Skin."

R. C. McElvain, M.D., St. Louis, met with officers and members of the board of directors of the American Academy of General Practice on September 15 in regard to the annual session to be held in Cincinnati March 7, 8 and 9, 1949.

Physicians who have appeared recently on programs of component medical societies under the auspices of the Committee on Postgraduate Course follow:

Raymond A. Mezera, M.D., St. Louis, spoke at a meeting of the Jefferson County Medical Society on "Etamon Chloride and the Antihistamine Drugs."

Roland P. Ladenson, M.D., Columbia, spoke at a dinner meeting of the North Central Counties Medical Society on "The Heart in the Aging."

James W. Allee, M.D., Columbia, spoke at a dinner meeting of the North Central Counties Medical Society on "Why a Doctor's Heart?" and at a dinner meeting of the Phelps-Crawford-Dent-Pulaski Counties Medical Society on "Brucellosis."

Paul F. Fletcher, M.D., St. Louis, spoke at a meeting of the Eighth Councilor District on "Diagnosis and Treatment of Common Obstetric Problems Encountered in General Practice."

Francis A. Carmichael, Jr., M.D., Kansas City, spoke at a joint dinner meeting of the societies in the Sixth District on "The Management of Head Injuries."

Claude J. Hunt, M.D., Kansas City, spoke at a meeting of the Eighth Councilor District on "Bowel Obstruction."

Paul Hagemann, M.D., St. Louis, spoke at a joint dinner meeting of physicians from Lincoln, St. Charles and Warren counties on "The Management of Arthritis."

R. O. Muether, M.D., St. Louis, spoke at a meeting of the Eighth Councilor District on "Pancreatic Dyspepsia."

Edward Massie, M.D., St. Louis, spoke at a meeting of the Fifth Councilor District on "Acute Rheumatic Fever."

E. H. Parsons, M.D., St. Louis, spoke at a meeting of the Fifth Councilor District on "Signs of Early Mental Disorders."

G. C. Edwards, M.D., St. Louis, spoke at a dinner meeting of the North Central Counties Medical Society under the auspices of the Missouri Heart Association on "The Management of Hypertension."

William H. Olmsted, M.D., St. Louis, spoke at a meeting of the Fifth Councilor District on "The Dietetic Treatment of Diabetes."

Leo J. Hartnett, M.D., St. Louis, spoke at a meeting of the Second Councilor District on "Present Day Indications for Hysterectomy."

M. Pinson Neal, M.D., Columbia, spoke at a joint dinner meeting of the societies of the Tenth Councilor District on "Diagnoses Commonly Missed in General Practice."

August A. Werner, M.D., St. Louis, spoke at a meeting of the Second Councilor District on "The Climacteric in Women and Men."

Eugene M. Bricker, M.D., St. Louis, spoke at a dinner meeting of the Jasper County Medical Society on "Carcinoma of the Colon."

Irwin Levy, M.D., St. Louis, spoke at a meeting of the Second Councilor District on "Newer Ideas in the Treatment of Common Neurological Disorders."

R. W. Steubner, M.D., St. Louis, spoke before the Saline County Medical Society on "Diseases of the Peripheral Vascular System."

Speakers who have appeared recently before lay groups under the auspices of the Committee on Health and Public Instruction follow:

Lucien W. Ide, M.D., St. Joseph, spoke at a Rotary luncheon, high school assembly and a county teachers' meeting at Unionville on "Heart Disease."

William J. Shaw, M.D., Fayette, spoke at a Rotary luncheon at Princeton on "Socialized Medicine" and to a high school assembly on "Schools in Wartime."

J. Milton Singleton, M.D., Kansas City, spoke at a Rotary luncheon at Chillicothe on "Pink Feathers for Your Nest," at a high school assembly on "Ambition? M. D., Lawyer, Merchant, Chief?" and at a business college assembly on "Business and the M. D."

A. N. Altringer, M.D., Kansas City, President of the Jackson County Medical Society, spoke at a Rotary luncheon in Boonville on "Socialized Medicine."

W. S. Sewell, M.D., Springfield, spoke at a Rotary luncheon at Buffalo on "Socialized Medicine."

Robert Mueller, M.D., St. Louis, President, has spoken before the following meetings on the subject "A Challenge to Medicine": a joint dinner meeting of the societies of the Tenth Councilor District at Farmington, a joint dinner meeting of physicians from Lincoln, St. Charles and Warren counties at Wentzville, a meeting of the Fifth Councilor District at Fulton, a meeting of the Eighth Councilor District at Mount Vernon, a meeting of the Second Councilor District at Moberly and a joint dinner meeting of the societies of the Sixth Councilor District at Sedalia.

MUSINGS OF THE FIELD SECRETARY

"We should have more medical society programs devoted to medical economics and politics and less on the scientific side. We can read plenty of scientific information in the various medical publications." This statement was made during a small group discussion of young physicians following a district medical meeting in rural Missouri (and prior to November 2).

The Committee on Health and Public Instruction is receiving numerous requests from lay groups for medical speakers. It looks like public speaking



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might well be added to the repertoire of the physician.

A physician was overheard to remark that politics are fascinating. Could it be that more physicians need to find this out?

Numerous requests from various rural communities in the state for a physician are being received. There is evidence to show that by community action in making available certain necessities involved in the establishment of a medical practice some localities have enticed qualified physicians to settle within their borders. Such things as rentable office space, the use of certain expensive medical equipment, home accommodations, opportunity to purchase an automobile at list price and assurance of community support have been used as magnets with considerable success.

It is understood that a number of young physicians investigating various seemingly attractive locations in rural Missouri have been discouraged from locating in these towns by the physician or physicians practicing there. It would be interesting to know if many of the people in these localities would offer the same discouragement if given the opportunity.

DEATHS

Hampton, Joseph R., M.D., Clinton, a graduate of the Missouri Medical College, 1893; honor member and former president of the Henry County Medical Society; aged 81; died August 28.

Bauman, Louis C., M.D., St. Joseph, a graduate of the Central Medical College of St. Joseph, 1904; honor member and former president of the Buchanan County Medical Society; Fellow of the American Medical Association; aged 73; died September 15.

Allbritain, James W., M.D., Kansas City, a graduate of the University Medical College of Kansas City, 1896; honor member of the Jackson County Medical Society; aged 80; died September 21.

Watts, Robert B., M.D., Wellington, a graduate of the Kansas City Medical College, 1894, honor member of the Lafayette County Medical Society; aged 85; died September 25.

Bredeck, Joseph Francis, M.D., St. Louis, a graduate of Washington University School of Medicine, 1914; member of the St. Louis Medical Society; Fellow of the American Medical Association; Health Commissioner of the City of St. Louis since 1933; aged 58; died October 5.

Child, Scott P., M.D., Kansas City, a graduate of the University of Pennsylvania School of Medicine, 1896; honor member of the Ozarks County Medical Society; Affiliate Fellow of the American Medical Association; retired; aged 81; died October 6.

Love, Joseph W., M.D., Nevada, a graduate of the National University of Arts and Sciences, 1896; honor member of the Vernon-Cedar County Medical Society; aged 79; died October 7.

Pearson, Donnell M., M.D., Louisiana, a graduate of Washington University School of Medicine, 1891; honor member of the Pike County Medical Society; aged 77; died October 12.

Parsons, Charles R., M.D., Sweet Springs, a graduate of the University of Tennessee College of Medicine, 1938; member of the Saline County Medical Society; aged 46; died October 22.

W. HARRY BARRON, M.D.

W. Harry Barron, M.D., was chosen as the candidate of the Missouri State Medical Association for the Outstanding General Practitioner Award of the American Medical Association. The following data was presented to the American Medical Association in recommending Dr. Barron for this honor.

"What did you bring him out here for Henry? Why I nursed him as a youngin'." That was the way Dr.



W. Harry Barron was greeted on June 3, 1904, on his first baby case at old Mine La Motte, Missouri, one month after he had graduated from the Barnes Medical College in St. Louis in May and three days after he had hung out his shingle at the mining village. Dr. Barron, in relating the incident, said the woman was then past 40 years of age and had, as she said, nursed him when he was just a baby.

Learning to deliver a baby came the hard way for Harry Barron. It came after hardships and hard work and was the reward of a boyhood ambition to become a doctor.

William Harry Barron was born October 13, 1875, in old Mine La Motte, the site of the oldest lead mine in the United States. He was born in an old log cabin, the son of William E. Barron and Rebecca Jane Rock Barron. The Barron family lived in North Carolina before coming to Missouri and were of French descent; the Rocks were from Indiana with a Scotch-Irish background.

Young Harry, upon reaching school age, was sent by his father, a lead miner, to Finley Public School at Mine La Motte and he finished the eighth grade in that mining community. His father, realizing the value of education, decided to send his son to the Cape Girardeau, Missouri, Normal and he enrolled there in 1893. Tuberculosis overtook his father, however, only a few months after entrance and Harry was forced to return home to the mines where he began work at the high wage of 60 cents per day. Out of the $3.60 he earned each week Harry contributed heavily to the support of his mother and the rest of the family.

In due time young Barron was compensated for his

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MARCH 1, 2, 3, 4, 1949

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hard work and advanced to the job of "mule skinner" at 75 cents per day and it was not long until he had just about reached the top—he was made a driller at $1.20 per day and did just about everything in the mine except, as he expressed it, "boss." All of his labors were underground and the working day was ten hours.

Although he loved the mining game and has stuck closely to it through the years, Harry Barron was still enthusiastic over medicine and in order to further his knowledge he enrolled at the old Carleton College in Farmington, Missouri. There was plenty of time but little money and he managed only three months at Carleton. However, when he returned to Mine La Motte, he came as a school teacher and taught for three years in the grade school there.

In September of 1900 Harry Barron entered the Barnes Medical College in St. Louis at the age of 25 with but a few dollars in his pocket and plenty of ambition. His strong desire to become a doctor kept him in school during difficult times and four years later he graduated. He since has told many of his friends that one of the happiest moments in his life occurred when he looked down the list on the honor roll and found himself in fourth place. The trustees of the college, on graduation day, presented him with a gold medal which Dr. Barron still treasures. On it was inscribed the words: "For the most acceptable deportment and greatest punctuality in general attendance."

Four years in medical school and the expenditure of $1,100 for his education had not caused Dr. Barron to lose sight of Mine La Motte, and to that little mining town he returned after graduation.

In May of 1904 he bought out the practice of Dr. William E. Yount, borrowed $1,000 to set himself up in the profession and launched himself upon a career of service to the people of Madison County in general and Mine La Motte in particular. He took in another "partner" on November 2 of the same year—Nellie A. Banes who became his wife. She was a native of Mine La Motte and a descendant of the noted St. Gemme family of Southeast Missouri. Dr. and Mrs. Barron are the parents of one child, Mrs. Linda Gale, who is a Red Cross executive in Council Bluffs, Iowa. They have a granddaughter whom they sent through Missouri University and who recently gave birth to a baby daughter. Great Grandfather Barron does not look the part and his looks do not seem to record 73 years of hard work and untiring devotion to the health of the community. His full head of graying hair and his quick gait are those of a man twenty years younger.

The maternity case mentioned in the opening paragraph was the first chapter in a 21-year volume of service at Mine La Motte, where Dr. Barron served the mining families and acted as company doctor to the old Mine La Motte Company, the predecessor of the St. Joseph Lead Company. That company retains Dr. Barron today and he has served St. Joe's employees for something over 27 years. Dr. Barron was retained but not on a retainer fee. He says that he has always charged the companies as he would "Tom, Dick and Harry."

During his first seven years at the little village of Mine La Motte, Dr. Barron rode horseback on his calls to the sick. He graduated at times to a buggy but when the real "country" calls were to be made, he saddled his horse for the trip. The mechanical age hit Southeast Missouri in 1911 and Dr. Barron began practicing out of the third automobile ever purchased in Madison County. It was a Ford and cost the doctor $750, not to mention the anxious moments spent with mud holes and flat tires.

Dr. Barron became "big time" in June of 1925 when he moved to Fredericktown, a large city of some 2,000 people. The improved automobiles made it possible for him to continue with his work at Mine La Motte and even today, with the doctor "slowing down," he is still the family doctor to the residents of that area.

During his 44 years of practice, Dr. Barron has delivered more than 2,600 babies in circumstances varying from hospitals to tents. Included in the 2,600 are 20 sets of twins. Asked about the different places in which he had brought youngsters into the world, Dr. Barron replied: "Well, let's see, I can remember delivering babies in hospitals, good homes, bad homes, chicken houses, corn patches, tents, box cars and in automobiles. If there were other spots, they're hardly worth mentioning."

The chicken-house case was in October of 1948 and testifies to the on-the-job attitude of Dr. Barron who in his four decades of practice has never turned down a patient because of his inability to pay. Needless to say, the good doctor has thousands of dollars on his books which he has "just forgotten about."

Dr. W. Harry Barron is regarded in Madison County as one of the outstanding citizens and has found time during his busy years to become "treasurer" of the history of Mine La Motte.

Floyd Calvin Shoemaker, L.L.D., in his book, "Missouri and Missourians," says of Dr. Barron: "Those who treasure the ancient history of Missouri owe a debt of gratitude to Dr. Barron's constant zeal and researches in preserving material relics and documentary evidence concerning this original lead mining center. The land embracing the Mine La Motte was patended by Renault in 1723. Several of the old diggings in this part of Missouri bore the names of the original proprietors and Mine La Motte was named in honor of the famous LaMotte Cadillac, founder of the city of Detroit and later governor of Louisiana. Dr. Barron was the son of a lead miner and he himself worked in and around the mines, and no one knows the characteristics of lead ore better than himself."

In order to kill in its infancy any idea that Dr. Barron's life has been spent entirely with mining and medicine, some of his activities are listed: Red Cross Chairman in Madison County for several years, member of the Fredericktown Chamber of Commerce, active in the affairs of the Christian Church, member of the Selective Service Board in World War I and II, long-time member of the Rotary Club, a 33rd degree Mason, member of the Shrine, member of the I. O. O. F. for almost fifty years, county health officer, Coroner for two terms and honored on several occasions by mining companies for his work in conducting safety first schools.

Dr. Barron is now acting physician to the St. Joseph Lead Company, the Park City Consolidated Mines Company, the Fredericktown Lead Company, the St. Louis Smelting and Refining Company and the National Lead Company and that is all—for there are no other mining ventures in Madison County. As if his duties as "family" doctor and physician for the mines were not enough, Dr. Barron serves as examiner for several insurance companies and as surgeon for the Missouri Pacific Railroad.

He has been honored with the presidency of the County Medical Society for two terms, has served as president of the Southeast Missouri Medical Society and of the Five-County Medical Association; is a mem-

In Angina Pectoris



In Angina Pectoris the incapacitating symptoms frequently may be prevented by appropriately regulated administration of a vasodilator having a sustained effect. This type of medication may be indicated:

FOR THE PERSON

- *who suffers "indigestion" and "gas" after a heavy meal.*
- *who is compelled to stop and rest when climbing a flight of stairs.*
- *who is stricken with precordial pain on unusual exertion or emotion, or when exposed to cold.*

The vasodilatation produced by Erythrol Tetranitrate Merck (Erythrityl Tetranitrate Tablets U.S.P.) begins about 15 minutes after administration, and lasts from 3 to 4 hours.

Experience has shown that the acute attack of anginal pain is most readily relieved by the prompt removal of the provocative factor, and by the use of organic nitrates or nitrites. For prophylactic purposes—to control anticipated paroxysms—the delayed but prolonged action of Erythrol Tetranitrate is reported as especially useful. Erythrol Tetranitrate, because of its slow and prolonged action, also is of value for preventing nocturnal attacks.

ERYTHROL TETRANITRATE
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Manufacturing Chemists

ber of the Missouri State Medical Association to which he has been a delegate for fifteen or sixteen years, and also holds membership in the American Medical Associations.

Sandwiched between his civic duties and his practice, Dr. Barron finds time to read the latest medical journals and keep abreast of the new developments in medicine.

And if this is not enough—you are invited to visit Dr. W. Harry Barron of Fredericktown, Missouri, one of the grand "country" doctors who serve this section of Missouri, and a man who has not lost his sense of humor through years and years of administering to the sick and suffering.

PULMONARY DISEASES

A postgraduate course in "Pulmonary Diseases" will be sponsored by the American Trudeau Society in cooperation with the St. Louis University School of Medicine on January 17, 18 and 19, 1949. The course is planned specifically for physicians in general practice. A tuition fee of $25.00 will be charged for the course. The American Trudeau Society, 411 N. Tenth Street, St. Louis, is handling registration and all meetings of the course will be held in St. Louis University School of Medicine. This is one of a series of postgraduate courses on "Pulmonary Diseases" sponsored by leading medical schools under the leadership of the American Trudeau Society, the medical section of the National Tuberculosis Association.

CANCER CLINICS AT THE ELLIS FISCHEL STATE CANCER HOSPITAL

The schedule of clinics at the Ellis Fischel State Cancer Hospital, Columbia, for December, to which all members are invited, beginning at 1:00 p. m., each clinic, follows:

December 1: Miscellaneous.
December 3: Gynecology and Genitourinary.
December 8: Skin.
December 10: Breast.
December 15: Gastrointestinal.
December 17: Cervix.
December 22: Skin.
December 24: Head and Neck.
December 29: Miscellaneous.
December 31: Miscellaneous.

ORGANIZATION ACTIVITIES

THE COUNCIL

The Council met at the Muehlebach Hotel, Kansas City, on November 6, and 7, 1948, with J. W. Thompson, M.D., St. Louis, Chairman, presiding. Those present were Drs. H. E. Petersen, St. Joseph; W. F. Francka, Hannibal; J. W. Thompson, St. Louis; Otto W. Koch, Clayton; J. F. Jolley, Mexico; R. W. Kennedy, Marshall; C. Edgar Virden, Kansas City; W. S. Sewell, Springfield; E. C. Bohrer, West Plains; Frank W. Hall, Cape Girardeau; C. E. Hyndman, St. Louis; Robert Mueller, St. Louis; Wallis Smith, Springfield; W. A. Bloom, Fayette; Arthur Altringer, Kansas City; James R. McVay, Kansas City; Ralph E. Duncan, Kansas City; V. T. Williams, Kansas City; Mr. D. E. Caywood, Springfield; Mr. W. H. Bartleson, Kansas City; Mr. Ray McIntyre and Mr. T. R. O'Brien, St. Louis.

Mr. McIntyre told of a meeting on October 25 sponsored by the Department of Agriculture on brucellosis and said that the department was going to attempt to obtain legislation which would assist in combatting the disease. Upon motion of Dr. Smith, it was voted that a committee be appointed from the membership of the Association to assist in this work.

The Council approved the placing of a wreath on the Beaumont grave by the President of the Association.

A radio program sponsored by the A. M. A. similar to the one held last year was announced and since a speaker from St. Louis appeared in the program last year, Dr. Virden was asked to select a speaker from Kansas City for this year's program.

Mr. O'Brien reported that several states had been contacted as to their handling of the dues of men in military service and they had handled it by action of their Councils rather than by change in the by-laws, all of them acting to remit such dues. On motion of Dr. Virden, it was voted that dues of men in military service be remitted, awaiting final action by the House of Delegates.

The report of the Treasurer was approved.

The following Committee on Budget was appointed: Drs. Hyndman, Petersen, Jolley, Virden and Thompson.

After discussion of the suggestion by the A. M. A. that the Association take over the dues of the Woman's Auxiliary, thus making every physician's wife automatically a member, and report of the suggestions of the Missouri Woman's Auxiliary, on motion of Dr. Virden, it was voted that the Association not approve the A. M. A. resolution and that the Auxiliary continue as at present.

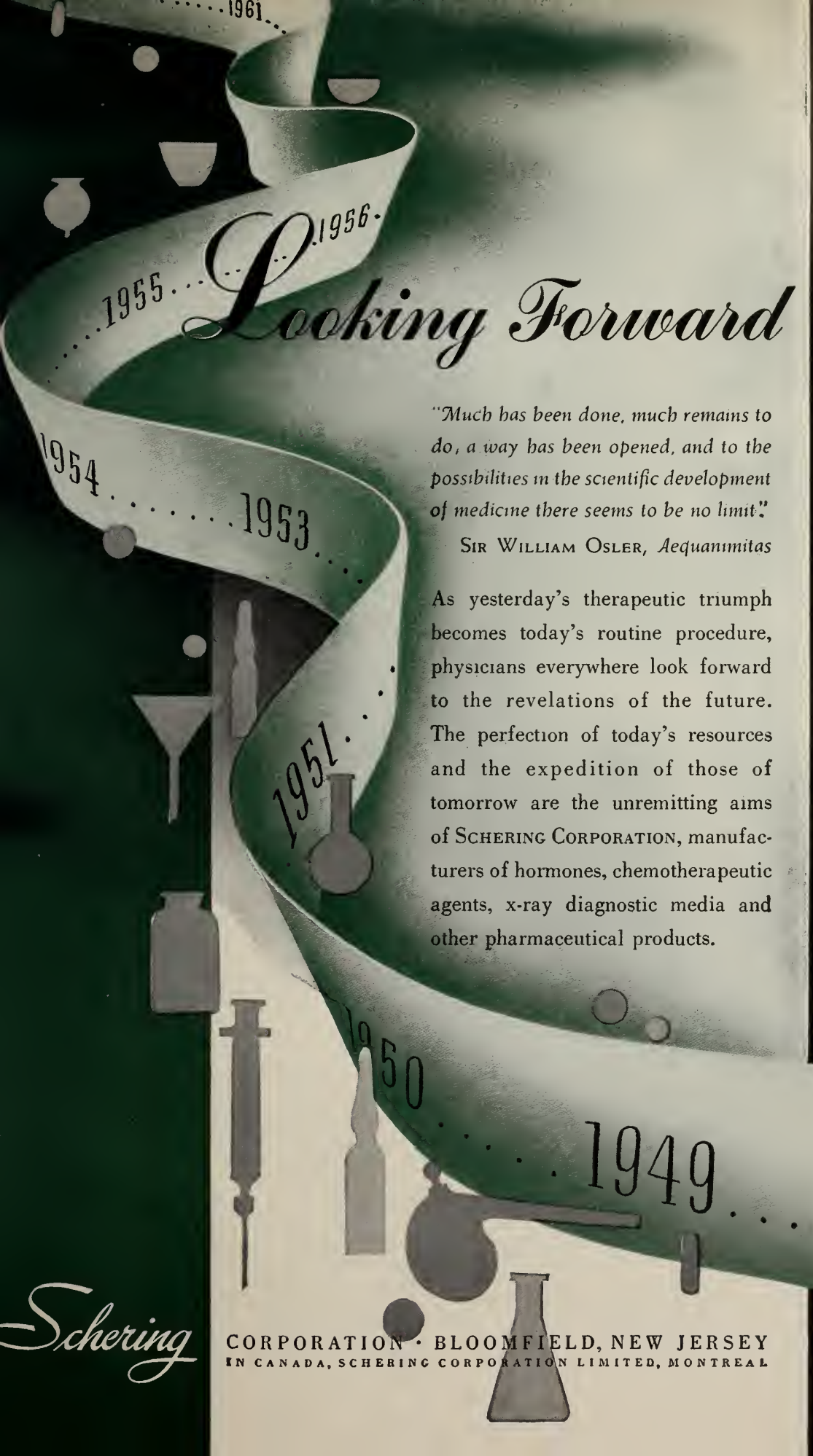
A letter from the State Nurses Association saying that action of that body in endorsing the Missouri State Association of Practical Nurses would have to await their meeting was presented.

A communication from the Council on National Emergency Medical Service of the A. M. A. was read requesting that each state appoint a committee on National Emergency Medical Service. Upon motion of Dr. Smith, it was voted to do this. The chairman appointed the following committee: Drs. Mueller, Smith and Morris B. Simpson.

The recent meeting at French Lick of the Blue Cross and Blue Shield Commissions was discussed from several angles; the need for a national setup, the difficulty of some states coming under an insurance plan, the wishes of labor organizations in health matters, the plausability of awaiting action of the House of Delegates of the A. M. A. before any final action is taken, before the Blue Shield plans take action, the Blue Cross plans having approved the proposal presented. Upon motion of Dr. Virden, it was decided that Missouri delegates to the House of Delegates of the A. M. A. should be fully informed on the problems before they go into the House discussion and that they should proceed on this prior information, based on the discussion brought out in the House of Delegates.

Mr. McIntyre reported on activities of component societies and Councilor Districts in the last month, reporting a listing leaving five days on which there were no meetings but in several cases several societies had meetings on the same date. He pointed out that the Committee on Postgraduate Course was active in supplying speakers for these meetings.

Mr. McIntyre also gave a detailed report on the number of hospitals or additions to hospitals under construction in the state.



SCHERING

"Much has been done, much remains to do, a way has been opened, and to the possibilities in the scientific development of medicine there seems to be no limit."

SIR WILLIAM OSLER, *Aequanimitas*

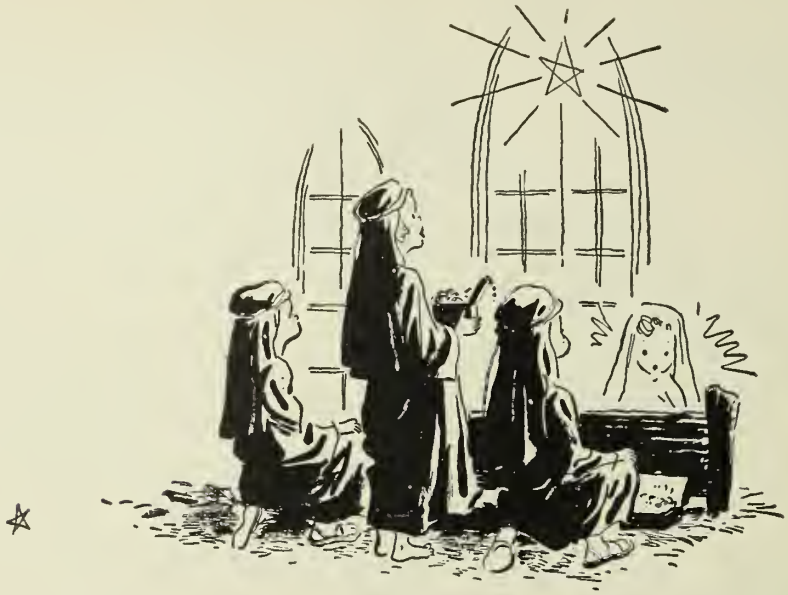
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Normal childhood, a chance to compete and play with other children on equal terms—that is the hope and prayer of *petit mal* victims, and their parents. And that is the cheering prospect which Tridione holds forth. Clinical reports show that a high percentage of cases not amenable to other forms of therapy react favorably to Tridione. In one study, Tridione was given to 166 patients with *petit mal*, myoclonic jerks and akinetic seizures who had not been benefited by other medication.[1] With Tridione, 83% showed fewer seizures. Some of the patients became seizure-free and remained so even after Tridione was withdrawn. Similar results have been reported by other investigators. Thus it is not surprising to find Tridione designated as the drug of choice in the *petit mal* triad. Why not give it a trial in your next *petit mal* case? You may obtain Tridione in 0.15-Gm. *Dulcet** Tablets, in 0.3-Gm. capsules, and in a flavored solution containing 0.15 Gm. per fluidrachm. For literature on Tridione, just drop a line to ABBOTT LABORATORIES, North Chicago, Illinois.

*Medicated Sugar Tablets, Abbott. T.M. Reg. U.S. Pat. Off.

1. Lennox, W. C. (1947), Tridione in the Treatment of Epilepsy, J. Amer. Med. Assn., 134:138, May 10. **2.** Merritt, H. H. (1947), Recent Advances In the Treatment of Epilepsy, with Particular Emphasis on the Use of Tridione, Arch. Neurol. & Psychiat., 57:130, Jan. **3.** Gibbs, F. A. (1947), New Drugs of Value in the Treatment of Epilepsy, Annals Int. Med., 27:548, Oct. **4.** Fetterman, J. L., and Weil, A. A. (1947), Practical Aspects of Epilepsy (with special consideration of epilepsy in children), Med. Clin. N. America, 31:1273, Sept. **5.** Liebert, E. (1947), Treatment of Neurological Disorders with Tridione, Ill. Med. J., 91:311, June.

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The Committee on Awards announced that Dr. Harry Barron, Fredericktown, had been selected for nomination to the American Medical Association for the Outstanding General Practitioner Award. The committee recommended that a definite set of rules for such selection be set up based on those of the A. M. A. and that hereafter a secret committee make the nomination. It also was agreed that in future years the recommendations should be made by August 1.

A letter from Dean Stubbs was read saying that a date for a meeting with a committee from the Board of Curators would be suggested soon.

Upon motion of Dr. Mueller, the Committee on Rural Health was allowed funds needed for contacting interns and residents in St. Louis and Kansas City through a dinner meeting similar to the one held in Kansas City last spring.

Dr. Virden presented Dr. John Knight, Kansas City, who presented the following reiteration of the policy of the Association on health for the people. "Recognizing the responsibility of the medical profession in assuming leadership in planning for improved medical and hospital services to the people of Missouri, the Council of the Missouri State Medical Association offers a six point program to meet the needs of the citizens of the entire State of Missouri.

"In presenting this program to the people of Missouri the Missouri State Medical Association believes that not only will it improve the health, social status, and economic structure of the state but that it will result in achieving a closer relationship within the State of Missouri of all organizations that are participating in medical and health care, whether private or publicly supported. These agencies all joining together in a correlation of programs and plans will result in an improved health program in Missouri which will include not only care for the sick but an educational program in preventive medicine and patient care. These preventive and educational programs can be accomplished along with the expansion of hospital facilities and if an increased number of doctors are available for service within the state.

"The Missouri State Medical Association presents the following six point program for the improvement of the health and welfare of all the people of Missouri.

"Point One. More hospital beds and hospital facilities are needed in strategic localities throughout the state. The medical profession cooperated in working for the passage of the Hospital Survey and Construction Act for Hospitals. Following enactment of this legislation the State of Missouri became eligible to participate in grants under the Hill-Burton Act, which provides one third of the cost of construction for hospitals, where such hospitals are approved under the program.

"The Missouri State Medical Association urges communities throughout the state to avail themselves of the grants offered under the Act in meeting the need for hospital beds in rural areas. During 1948 a total of $2,282,550 in federal money was made available in Missouri for the improvement and construction of hospital units.

"United community action of all groups is necessary to solve the hospital bed shortage in rural areas. The task of meeting the requirements of the provisions under the Hill-Burton grant is a local one, and the Missouri State Medical Association offers its full support to communities in working out plans.

"Point Two. Prepaid hospital and surgical care benefits are sponsored by the Missouri State Medical Association to protect the average family in case of serious and lengthy illness. Financial worry over unexpected hospitalization retards recovery.

"Group Hospital Service, a Blue Cross Service, was started in St. Louis in 1936 and this plan now covers about two thirds of the state with 101 member hospitals. From an enrollment of 8,114 at the end of the first year this plan has grown to a total of 819,928 participants. The Group Hospital Service was started through the efforts of the medical profession to work out a nonprofit community program for prepayment of hospital costs.

"The Missouri Medical Service was organized in St. Louis in April, 1945, to provide for payment of certain general surgical services, medical and other diagnostic procedures. At the end of the first year a total of 29,153 persons was enrolled and the participants are limited to employed groups of persons covered under the Blue Cross Plan and their dependents.

"The Blue Cross Hospital Service Plan was inaugurated in Kansas City in 1938 through the untiring efforts of the medical profession. At present there are 247,967 persons enrolled in this plan which covers the western part of Missouri. Since May 1938 a total of 113,001 patients has received benefits under the plan with a total expense of $5,371,992.

"Surgical Care, Inc., was organized in Kansas City in June 1943 as a nonprofit prepayment medical care plan. This program covers the metropolitan area of Kansas City and the nineteen northwest counties. Under this plan 65,233 members have received care at a cost of $2,243,266.

"These nonprofit plans offer protection to Missouri families in case of serious and lengthy illness.

"Point Three. Increasing the programs of the Division of the Department of Public Health and Welfare in the interest of preventive medicine, public health education, maternal and child welfare programs is recognized by the Missouri State Medical Association as extremely important to the people of the rural areas. Increased appropriations by the General Assembly for expanding the programs of this department have been supported by the Missouri State Medical Association. The establishment of the Division of Health in the revision of the statutes under the new constitution as a part of the Department of Public Health and Welfare was accepted as an obligation of the Missouri State Medical Association to aid in whatever way it could be helpful to the members of the General Assembly and the Governor of the state in the recommendations for the laws that were enacted.

"The Missouri State Medical Association has observed increased aid from appropriations for the aid of this department and the extension of its activities in the interest of health of the people.

"Point Four. The need for improvement in the facilities of the state hospitals operated for the benefit of sick people and the need for obtaining more professional personnel has been recognized by the Missouri State Medical Association. They have urged the financial aid and administrative changes which would produce better medical care and services for the people of Missouri and especially those who are patients in these hospitals.

"The Governor of the state recognized this need and likewise did the 64th General Assembly. Following the recommendation of the Governor a special committee of the House of Representatives was appointed who made an investigation of the hospitals. Following their

investigation, legislation was introduced that resulted in appropriations of funds for improvement of the physical facilities and the employment of more professional personnel.

"The Missouri State Medical Association recommends that these improvements be continued and advocates that further support be given by the state to improve the state hospitals for the benefit of the people of Missouri.

"Point Five. The Missouri State Medical Association fully realizes that the building of additional medical facilities, and the prepayment of medical costs is of no avail to Missourians unless there are doctors to care for the patients. With the realization that more doctors of medicine are needed in rural Missouri the Missouri State Medical Association advocates increasing the Missouri University Medical School to a four year medical school so Missouri youth may have the opportunity of completing their medical education at their own State University.

"In sponsoring the education of doctors the Missouri State Medical Association believes that every citizen of Missouri studying medicine should be afforded equal opportunities of completing their education at the State University, as those afforded to students pursuing other professions. Missouri needs doctors, yet graduates of the two year medical school at the University of Missouri must pay the increased costs to attend private medical schools, or pay large out-of-state fees in other state universities offering the final two years. We believe that the youth of Missouri studying medicine should be offered opportunities comparable to what other state universities offer their residents.

"Experience in other states has proved that state universities educating doctors from rural areas have found that many of these doctors return to their own area to practice.

"The Missouri University School of Medicine, recommended by the Missouri State Medical Association, must be a school of medicine that meets the requirements of all the accrediting authorities.

"The school must have a full and complete staff of instructors who are properly qualified by education and experience which shall include both the full time staff as well as practicing physicians teaching part time. The curriculum and standards of the school must be maintained at a level so the graduates are eligible for examination and licensure in all states.

"The school must afford the student the opportunity in medical education to see and observe all types and kinds of ambulatory clinic patients as well as those hospitalized and available for teaching purposes including both acute and chronic. The clinical years in medical schools are of utmost importance in the completion of the medical education. Hospital and medical school authorities agree that an outpatient clinic department must have a minimum of at least 60,000 patient visits a year to be satisfactory for teaching purposes.

"The school of medical education must be located not only where clinical material is always available, but in an area where the student doctors have the opportunity of attending scientific medical meetings and have access to suitable medical library facilities. The students should also have the opportunity of serving as externs in private hospitals and of attendance at the private hospital scientific programs.

"Point Six. Scholarships and financial assistance should be available to men and women of Missouri who desire to study medicine at the State University. Medical education scholarships are sponsored by the Missouri State Medical Association through the Woman's Auxiliary.

"Of great benefit to rural areas would be scholarship worked out on a community or trade territory basis for financial assistance to local young men and women who desire to study medicine at the State University and who plan to return to their own communities for practice. Civic clubs and citizens of local communities could band together in educating promising youth of their own particular areas.

"Farm organizations cognizant of the needs of rural areas could well be the sponsoring group to assist with financial help in the education of farm youth desiring to pursue medicine, but unable to do so because of financial reasons.

"Scholarships provided for by enacted legislation of the General Assembly could be divided through various state areas.

"The Missouri State Medical Association stands ready to offer its service to any group within the State interested in working out a scholarship plan."

Upon motion of Dr. Virden, this was accepted and approve as corrected.

Upon motion of Dr. Mueller, it was voted that this be sent to all members of the Association.

Upon motion of Dr. Mueller, the report of the Committee on Public Policy and Public Relations was accepted and approved in principle and with some recommendations held for further consideration.

The following resolution was presented and upon motion of Dr. Mueller, it was voted that this be presented to the House of Delegates by the Missouri delegates:

Whereas, At the last annual session of the House of Delegates of the American Medical Association held in Chicago considerable time was consumed discussing who besides officially seated delegates should be allowed to sit in executive sessions in the House of Delegates, and

Whereas, The time so consumed served no good purpose and was a complete loss to both the American Medical Association and the delegates in session, and

Whereas, The chief officers of the constituent state medical associations are in close touch with the problems of their respective state associations and are vitally interested in the proceedings of the House of Delegates, and

Whereas, A definite clarification or change in the by-laws of the association could eliminate this unnecessary time consuming discussion, therefore be it

Resolved, That the House of Delegates either recommend to the speaker for his action or vote a change in the by-laws that presidents, executive secretaries and chairmen of the executive councils of the constituent state medical associations be allowed to sit with the officially seated delegates at executive sessions of the House of Delegates, and that these officers of the constituent state medical associations be given credentials by their state associations and be registered at each session of the House of Delegates with the credentials committee and be given appropriate identification insignia that can be readily recognized by the Sergeant-at-Arms and that a portion of the auditorium be marked off where these visitors may sit apart from the official delegates.



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2. Float measured powder on top of the water



3. Mix with a large spoon or fork

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The following budget presented by the Budget Committee was accepted for presentation to the House of Delegates:

Salaries	$25,800.00
Journal Expense	16,000.00
Postage and Express	1,000.00
Printing and Stationery	2,000.00
Travel, Executive Secretary	1,200.00
Travel, Field Secretary	2,000.00
Telephone and Telegraph	1,000.00
Office Rent and Light	2,800.00
Meetings, Committee Expense	12,000.00
Defense	500.00
Postgraduate	1,000.00
Woman's Auxiliary	500.00
Public Relations	4,500.00
Insurance Annuity	850.00
Miscellaneous-General Expense	2,000.00
Furniture and Fixtures	500.00
Social Security Tax	175.00
Total	$73,925.00

Dr. Virden was thanked for the hospitality extended the members of the Council.

J. W. Thompson, Chairman.

SOCIETY PROCEEDINGS

FIRST COUNCILOR DISTRICT

H. E. PETERSEN, ST. JOSEPH, COUNCILOR

Clay County Medical Society

The Clay County Medical Society met at Liberty on October 28 for the election of officers. The following officers were elected: President, W. H. Goodson, M.D., Liberty; vice president, R. H. Dunham, M.D., North Kansas City; secretary-treasurer, S. R. McCracken, M.D., Excelsior Springs; delegate, A. E. Spelman, M.D., Smithville; alternate delegate, W. H. Goodson, M.D., Liberty; members of board of censors, E. B. Robichaux, M.D., Excelsior Springs (three years), W. H. Goodson, M.D., Liberty (two years), R. C. Porter, M.D., North Kansas City (one year).

S. R. McCracken, M.D., Secretary.

Clay County Medical Society

One hundred twenty-five physicians of Northwest Missouri and Eastern Kansas gathered in Excelsior Springs the afternoon of November 4 for a clinical conference sponsored by the Clay County Medical Society. Afternoon and evening meetings were held at the Elms Hotel. Outstanding authorities on a number of medical subjects were the speakers at an afternoon program which began at 2:00 o'clock and at an evening program which followed at 6:00 p. m. at a banquet.

The one day meeting opened with a 12:15 p. m. round table luncheon at which Dr. E. C. Robichaux, Excelsior Springs, presided. A forum discussion on "Arthritis" was presented with Drs. Stewart Gilmore, internist, J. B. Weaver, orthopedist, Tice, roentgenologist, and Donald L. Rose, physical medicine, all of Kansas City.

Dr. Paul Bruce, clinical director of the Veterans Hospital, Excelsior Springs, presided at the afternoon meeting. Dr. Drew Luten, St. Louis, president of the Missouri State Heart Association, spoke on "Heart Disease." Dr. N. A. Womack, Iowa City, Iowa, discussed "Benign Lesions of the Breast." Dr. C. H. Marcy, Pittsburgh, spoke on "Pulmonary Tuberculosis." Dr. R. J. Crossen, St. Louis, discussed "Office Gynecology."

Dr. A. E. Spelman, Smithville, president of the Clay County Medical Society, presided at the evening session following the banquet. Dr. Drew Luten, St. Louis, spoke on "The Use of Digitalis" and Dr. C. H. Marcy, Pittsburgh, on "Streptomycin in the Treatment of Tuberculosis."

The Clay County Medical Society planned the clinic as a means of broadening the knowledge of medicine, with emphasis on the assistance to be given the general practitioner.

S. R. McCracken, M.D., Secretary.

FOURTH COUNCILOR DISTRICT

OTTO W. KOCH, CLAYTON, COUNCILOR

St. Louis County Medical Society

The St. Louis County Medical Society held its regular meeting on October 27 at the Health Center, St. Louis County Hospital, at 8:30 p. m.

Dr. Richard Sutter read a letter from the Woman's Auxiliary calling attention to the resolution passed by the House of Delegates of the American Medical Association recommending that each state association assume the dues of the Woman's Auxiliary, thus automatically making every physician's wife a member. Upon motion it was recommended that the Missouri State Medical Association assume the dues of the Woman's Auxiliary.

Dr. William M. James, St. Louis, spoke on "Ocular Disorders of Childhood." Dr. James' concise presentation emphasized the importance of measles in the first trimester of pregnancy as a cause of congenital defects and suggested possible methods for control of this problem. He also stressed the diagnosis and management of epidemic keratoconjunctivitis. Active discussion followed the presentation. The speaker was given a rising vote of thanks.

Robert C. Kingsland, M.D., Secretary.

Lincoln, St. Charles, Warren Counties Medical Societies

Twenty-eight physicians and guests from Lincoln, St. Charles and Warren counties attended a dinner meeting at the Southern Air, Wentzville, on October 11.

Paul Hagemann, M.D., St. Louis, discussed "The Management of Arthritis."

Robert Mueller, M.D., St. Louis, President of the Association, spoke on "A Challenge to Medicine."

Another meeting of this group was set for early in December.

J. C. Creech, M.D., Secretary,
Lincoln County Medical Society.

FIFTH COUNCILOR DISTRICT

J. F. JOLLEY, MEXICO, COUNCILOR

A meeting of the Fifth Councilor District was held in Fulton, October 14, with the Callaway County Medical Society acting as host.

The program in the afternoon was held at the State Mental Hospital and included two interesting discussions: "Signs of Early Mental Disorders" by E. H.



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high potency Only two or three drops of the 0.05 per cent solution of Privine hydrochloride usually give prompt and complete relief of nasal congestion and hypersecretion.

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bland and non-irritating Privine is prepared in an isotonic aqueous solution buffered to a pH of 6.2 to 6.3. Artificial differences in osmotic pressure between solution and epithelium are avoided; stinging and burning are usually absent.

relatively free from systemic effects Although a sedative effect is occasionally noted in infants and young children – usually after gross overdosage – Privine is generally free of systemic effect. The absence of central nervous stimulation permits the use of Privine before retiring without interfering with restful sleep.

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Parsons, M.D., St. Louis, and "Acute Rheumatic Fever" by Edward Massie, M.D., St. Louis.

The evening program, held at the Fulton Country Club, began with a social hour followed by a dinner. Two well received talks were presented; William H. Olmsted, M.D., St. Louis, spoke on "The Dietetic Treatment of Diabetes," and Robert Mueller, M.D., St. Louis, spoke on "A Challenge to Medicine."

As a part of the evening program, the Callaway County Medical Society presented 50 year service plaques to four of its members as a small tribute to their fifty years in the active practice of medicine.

The meeting was well attended with seventy-two physicians and guests present.

J. Frank Jolley, M.D., Councilor.

SIXTH COUNCILOR DISTRICT

R. W. KENNEDY, MARSHALL, COUNCILOR

Forty-five physicians attended a joint dinner meeting of the medical societies of the Sixth District at the "Old Homestead," in Sedalia, October 18.

Following a pleasant social hour those present enjoyed a delicious chicken dinner.

The program consisted of a practical discussion on "Head Injuries" by Francis A. Carmichael, M.D., Kansas City, and an important talk on "A Challenge to Medicine" by Robert Mueller, M.D., St. Louis.

The Pettis County Medical Society was host at the meeting.

R. W. Kennedy, M.D., Councilor.

EIGHTH COUNCILOR DISTRICT

W. S. SEWELL, SPRINGFIELD, COUNCILOR

On the afternoon and evening of October 21 physicians of the Eighth Councilor District and guests attended a district meeting at the State Sanatorium, Mount Vernon.

Three well received discussions were presented on the afternoon program as follow: Claude J. Hunt, M.D., Kansas City, spoke on "Bowel Obstruction," R. O. Muether, M.D., St. Louis, discussed "Pancreatic Dyspepsia," and Paul F. Fletcher, M.D., St. Louis, spoke on "Diagnosis and Treatment of Common Obstetric Problems Encountered in General Practice."

Following an evening social hour those present were treated to a dinner at the Sanatorium.

The evening program was composed of two most interesting talks: "The Doctor and the Law" was discussed by Mr. James T. Britt, Kansas City, and "A Challenge to Medicine" was presented by Robert Mueller, M.D., St. Louis.

Seventy-eight physicians and guests were in attendance during the two sessions.

Walter S. Sewell, M.D., Councilor.

NINTH COUNCILOR DISTRICT

E. C. BOHRER, WEST PLAINS, COUNCILOR

South Central Counties Medical Society

The South Central Counties Medical Society met in Cabool on October 15 for dinner at the El Patio Hotel with the following members and visitors present: Drs. J. R. Mott, Hartville; J. A. Fuson, Mansfield; H. G. Frame, R. W. Denney and A. C. Ames, Mountain Grove; Garrett Hogg, Jr., Cabool; T. J. Burns, Houston; Leslie Randall and H. L. Reed, Licking; Richard Musser, Willow Springs; E. C. Bohrer, Rollin H. Smith and C. F. Callihan, West Plains; Richard Odell and Edward Massie, St. Louis.

After dinner Dr. Callihan, the president, called the meeting to order in the office of Dr. Hogg.

Dr. Odell showed roentgen ray films and spoke on "Common Errors in Treating Fractures."

Dr. Massie spoke on "Rheumatic Fever," especially dwelling on its protean manifestations and some of the newer methods of treatment.

Dr. Callihan expressed the Society's thanks and appreciation for the speakers' part in a profitable meeting.

The meeting adjourned to meet in Mountain Grove on November 19.

A. C. Ames, M.D., Secretary.

TENTH COUNCILOR DISTRICT

FRANK W. HALL, CAPE GIRARDEAU, COUNCILOR

St. Francois-Iron-Madison-Washington-Reynolds County Medical Society

The St. Francois-Iron-Madison-Washington-Reynolds County Medical Society held its regular monthly meeting at the State Hospital in Farmington on October 28.

Members present were Drs. M. T. Haw, H. M. Roebber and C. E. Sutton, Bonne Terre; C. H. Appleberry and Van W. Taylor, Flat River; Dailey Appleberry, Rivermines; H. C. Gaebe, Desloge; W. H. Barron, Fredericktown; G. L. Watkins, Jr., G. L. Watkins, Sr., S. A. Lanzafame and F. R. Crouch, Farmington.

Mr. Eugene Coon, assistant director of the St. Louis Regional Blood Center, outlined a program for the setting up and operation of a blood bank in St. Francois County. This blood program was approved unanimously and endorsed by the Society.

Mr. T. R. O'Brien, Executive Secretary, and Mr. Ray McIntyre, Field Secretary, Missouri State Medical Association, led a round table discussion on public relations, especially the operation of the various medical care programs.

After a general discussion and a short business meeting, the meeting adjourned.

F. R. Crouch, M.D., Secretary.

BOOK REVIEW

Surgical Pathology. By William Boyd, M.D., Professor of Pathology, the University of Toronto. Sixth Edition. With 530 Illustrations including 22 color figures. Philadelphia and London: W. B. Saunders Company. 1947. Price $10.00.

The sixth edition of this standard text of "Surgical Pathology" contains much of the same material and illustrations of the earlier issues. However the fundamentals of this "easy-to-read" text have been augmented in the latest edition by numerous paragraphs as well as new chapters on subjects of recent current interest. An example of this is the chapter dealing with the pathology and pathologic physiology of congenital heart disease.

Other new material includes Bittner's milk factor in relation to carcinoma of the breast, the Papanicolaou's method of diagnosing carcinoma of the cervix from vaginal smear, avitaminosis in carcinoma of the mouth, fibrositis of the back and others. The bibliography likewise has undergone constructive revision to bring before the student and practitioner the more recent advances in this field. The number of illustrations has been increased. It is a pleasure to recommend Boyd's latest edition for easy reading and constructive knowledge of surgical pathology.

R. A. T.



Further evidence of the safety of Benzedrine Sulfate therapy

More data, showing that Benzedrine Sulfate, in proper dosage, produced no toxic effects, have lately been published in a study by Caveness.[1]

He gave the drug for 14 consecutive weeks to 23 unselected hospital patients whose ages *averaged 65 years.* Daily dosages over the period ranged from 5 to 30 mg. The author observes:

"... no significant changes were noted in the cardiovascular, urinary, hematopoietic, or respiratory systems ..."

From this study, it would appear that Benzedrine Sulfate may be safely used in the treatment of depression in the aged.

1. New York State J. Med. 47:1003

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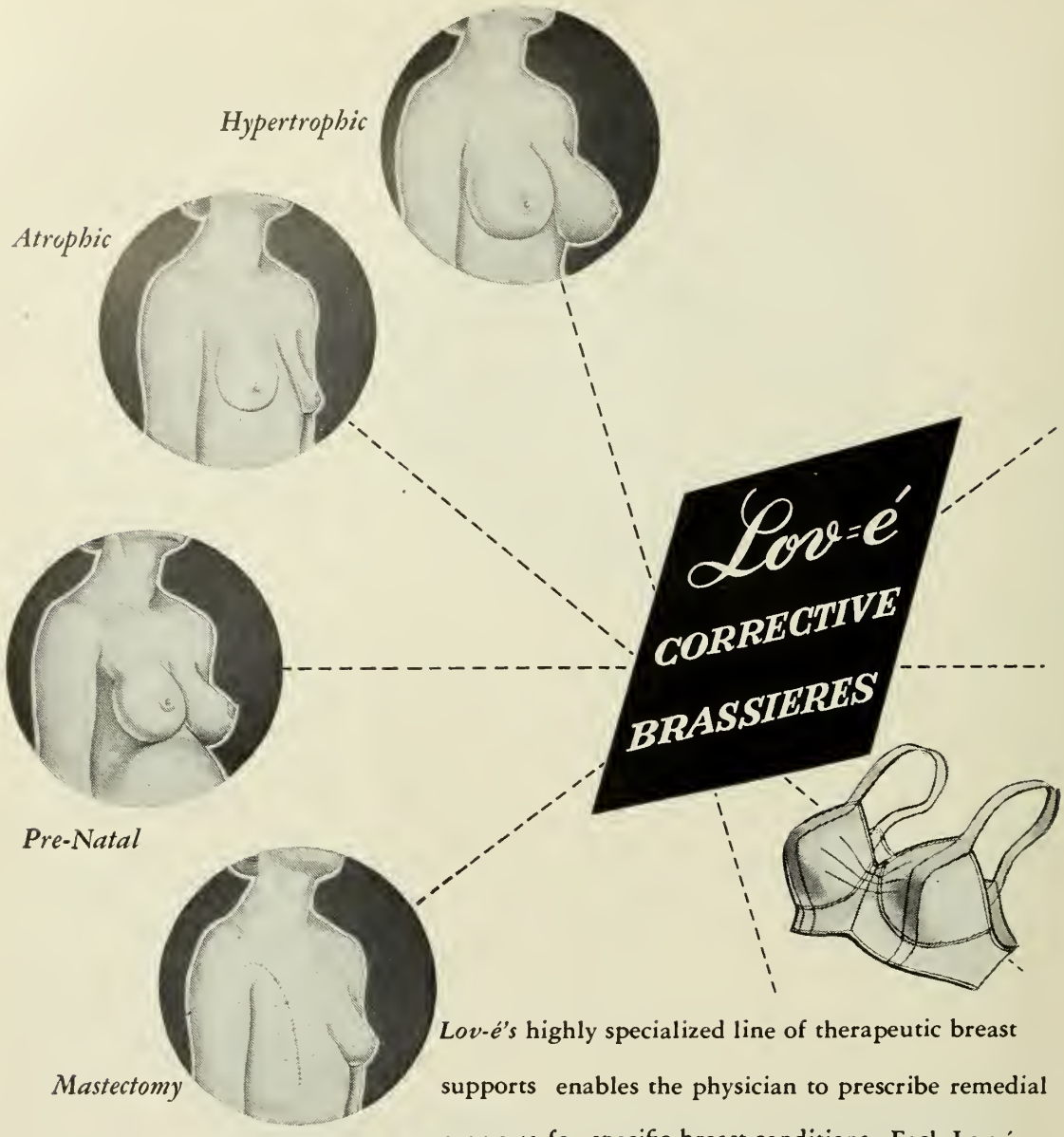
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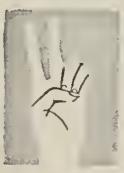
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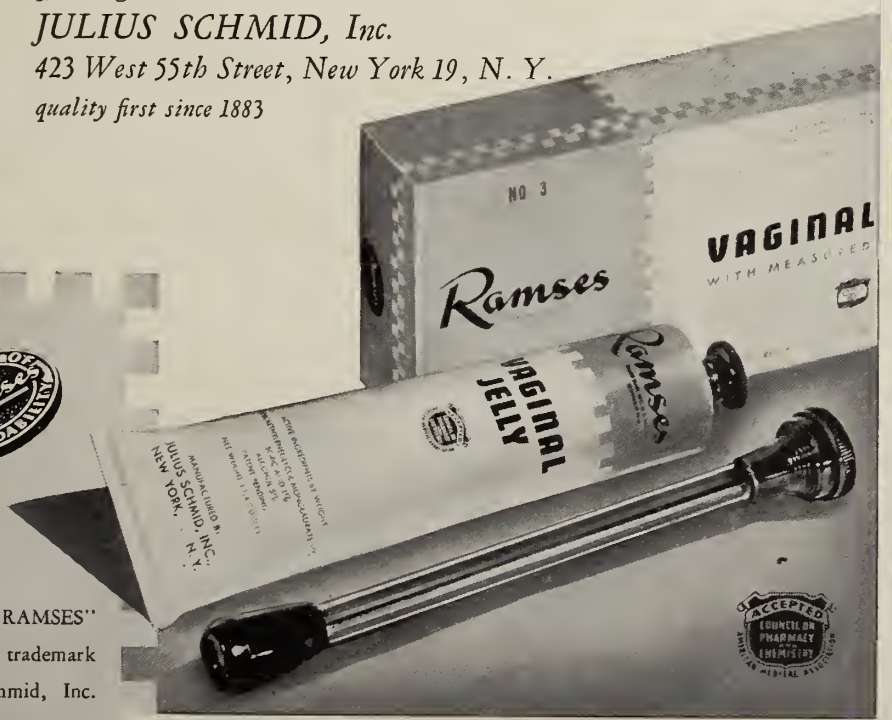
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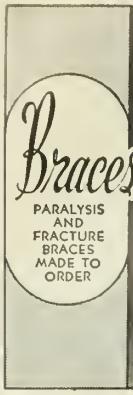
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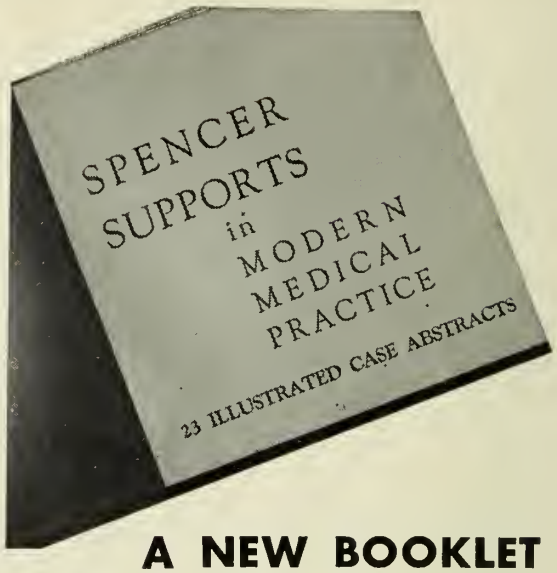
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